

# Final Minutes



## *Performance Measures Subcommittee Meeting #33*

Date: Thursday, October 19, 2006

Time: 8:30 am to 13:45 pm

Place: CASA Large Boardroom

10035 108 ST NW FLR 10  
EDMONTON AB T5J 3E1  
CANADA

Ph (780) 427-9793

Fax (780) 422-3127

E-mail

casa@casahome.

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### In attendance:

Name	Organization
Bob Myrick	Alberta Environment
Mary Griffiths	Pembina Institute
Ted Stoner	Canadian Petroleum Products Institute (CPPI)
Donna Tingley	CASA
Marianne English	CASA
Kevin McLeod (guest)	CASA
Markus Kellerhals (guest)	Environment Canada
Richard Melick (guest)	Alberta Environment

### Action Items

Task	Who	When
<b>29.4</b> Work through the calculation procedures for the indicators for performance measure #1	Marianne	for next subcommittee meeting
<b>31.7</b> Contact the EUB, the CFO team and the F/V team re data on province wide H <sub>2</sub> S emissions.	Marianne	for next subcommittee meeting
<b>31.8</b> Check with the CFO team re data on TRS.	Marianne	for next subcommittee meeting
<b>31.9</b> Check with the EUB re data on solution gas and coal bed methane.	Marianne	for next subcommittee meeting
<b>31.11</b> Contact Richard Melick of AENV re greenhouse gas data.	Marianne	To be done Oct 27
<b>32.5</b> Consult Ray Wong on how to handle the discontinuity with respect to years for which CAC emission inventories are available.	Bob and Marianne	To be done Oct 27
<b>32.6</b> Develop a draft procedure for calculating emission trends.	Bob and Marianne	To be done Oct 27
<b>32.10</b> Review Bill Page's recommendations to determine if he suggested surveying anything.	Marianne	for next subcommittee

		meeting
<b>32.12</b> Review the results from previous stakeholder surveys for recommendations on changes to the questionnaire.	Marianne	for next subcommittee meeting
<b>32.17</b> Check the minutes and notes from previous subcommittee meetings for suggestions on recommendations we might wish to make to the board during our presentation to the board on the performance measures review.	Marianne	for next subcommittee meeting
<b>33.1</b> Correct the minutes from the September 15 meeting and have them posted on the CASA website.	Marianne	asap
<b>33.2</b> Review the October version of the workplan in the light of the discussion of this meeting and revise it accordingly.	Marianne	For the next subcommittee meeting
<b>33.3</b> Develop a draft status report and forward it to subcommittee members for review.	Marianne	asap
<b>33.4</b> Review draft status report and forward comments to Marianne.	All	Within 48 hours
<b>33.5</b> Finalize, and submit, the status report.	Marianne	by November 3 <sup>rd</sup>
<b>33.6</b> Obtain data for ozone precursors, total reduced sulfur, solution gas, and odour.	Marianne	For the next subcommittee meeting
<b>33.7</b> Expand data sets where possible, develop consistent emission categories, revise the trend graphs, and test for statistical significance of the trends.	Marianne, Bob, Richard	For the next subcommittee meeting
<b>33.8</b> Develop a recommendation as to how Alberta emission trends are to be prepared and tested.	Marianne, Bob, Richard	For the next subcommittee meeting
<b>33.9</b> Consult with stakeholders re the potential indicators, three measures of particulates and the question of absolute emissions versus emission intensities.	Mary, Bob, Ted	For the next subcommittee meeting
<b>33.10</b> Obtain the required data for the fuel sold indicators from Statistics Canada and prepare trend graphs for the indicators.	Marianne	For the next subcommittee meeting
<b>33.11</b> Obtain energy intensity and mix data and prepare trend graphs.	Marianne	For the next subcommittee meeting
<b>33.12</b> Consult CASA stakeholders with respect to CASA organizing a meeting on the AQHI for Environment Canada.	Donna	For the next subcommittee meeting

<b>33.13</b> Consider if a question re CASA support to airsheds can be added to the stakeholder questionnaire.	All	At the next subcommittee meeting
<b>33.14</b> Follow-up on the outstanding assessments. ( <i>performance measure #3</i> )	Marianne	For the next subcommittee meeting

Donna chaired the meeting.

## 1. Administration

### a. Review and revise agenda and meeting objectives

The meeting objectives and the draft agenda were reviewed. It was agreed that time would not permit covering all items on the agenda and item #5 (review/revise stakeholder questionnaire) and the related objective (identify additional indicators based on the stakeholder questionnaire) were deferred to the next meeting (December 18). A typographical error in item # 1b. was noted; the minutes to be approved were those for the September 15 meeting.

### b. Review and approve draft minutes from September 15, 2006

A spelling mistake in the name of Richard Melick was noted. As well, the sentence “We will do both.” is to be added at the end of line 28 on page 8. With these corrections, the draft minutes from the subcommittee meeting of September 15, 2006 were approved.

**Action 33.1:** *Marianne to correct the minutes for the September 15 meeting and have them posted on the CASA website.*

### c. Review action items

Task	Who	Status
<b>29.4</b> Work through the calculation procedures for the indicators for performance measure #1	Marianne	Carry forward to next subcommittee meeting
<b>31.7</b> Contact the EUB, the CFO team and the F/V team re data on province wide H <sub>2</sub> S emissions.	Marianne	Carry forward to next subcommittee meeting
<b>31.8</b> Check with the CFO team re data on TRS.	Marianne	Carry forward to next subcommittee meeting
<b>31.9</b> Check with the EUB re data on solution gas and coal bed methane.	Marianne	Carry forward to next subcommittee meeting
<b>31.10</b> Check with Markus and/or Lawrence re data on VOCs and also check CAC and NPRI inventories.	Marianne	Done
<b>31.11</b> Contact Richard Melick of AENV re	Marianne	Will be done Oct

greenhouse gas data.		27
<b>31.13</b> Contact the Indoor Air Quality team and ask if they have selected an emission indicator for their work.	Marianne	Done
<b>32.1</b> Correct the minutes for the June 28, 2006 meeting and have them posted on the CASA website.	Marianne	Done
<b>32.2</b> Update the 2006 workplan.	Marianne	Done
<b>32.3</b> Contact NPRI and ask if separate data for releases to air, water, and land can be obtained.	Marianne	Done
<b>32.4</b> Produce line graphs for all the substances of concern for which CAC inventories are available.	Marianne	Done
<b>32.5</b> Consult Ray Wong on how to handle the discontinuity with respect to years for which CAC emission inventories are available.	Bob and Marianne	Will be done Oct 27
<b>32.6</b> Develop a draft procedure for calculating emission trends.	Bob and Marianne	Will be done Oct 27
<b>32.7</b> Call Ted if help is needed in obtaining the required transportation data.	Marianne	Help was not needed
<b>32.8</b> Check on what data is available with respect to energy intensity.	Marianne	Done
<b>32.9</b> Discuss, with the Airshed Council at their meeting on September 27, the possible airshed indicators that the subcommittee has discussed.	Donna	Done
<b>32.10</b> Review Bill Page's recommendations to determine if he suggested surveying anything.	Marianne	Carry forward to next subcommittee meeting
<b>32.11</b> Forward to subcommittee members, Dennis Stokes' report on the 2004 stakeholder survey.	Marianne	Done
<b>32.12</b> Review the results from previous stakeholder surveys for recommendations on changes to the questionnaire.	Marianne	Carry forward to next subcommittee meeting
<b>32.13</b> Forward to Sharon an invitation to the Communications Committee to review and amend the questions dealing with communications and to consider defining additional indicators related to these questions.	Marianne	Done
<b>32.14</b> Invite Kevin McLeod to participate in the discussion on a human health indicator on October 19.	Marianne	Done
<b>32.15</b> Revise the proposal re the use of the	Marianne	Done

CASA air quality indicators by the airsheds.		
<b>32.16</b> Present the proposal to the Airshed Council at their meeting of September 27.	Donna	Done
<b>32.17</b> Check the minutes and notes from previous subcommittee meetings for suggestions on recommendations we might wish to make to the board during our presentation to the board on the performance measures review.	Marianne	Carry forward to next subcommittee meeting
<b>32.18</b> Ensure that the subject line of the email providing the agenda and materials for the October 19 <sup>th</sup> meeting mentions the 8:30 am start.	Marianne	Done

With respect to item 31.10, Marianne reported that Markus Kellerhals (Environment Canada) feels that the best source for VOC data is Environment Canada's Criteria Air Contaminants inventories.

With respect to item # 31.13, they have not selected an emission indicator for their work.

With respect to item #32.3, Richard Melick reported that he has the NPRI database and that he has separated out air releases from total releases for data prior to 2003.

With respect to item #32.13, Marianne reported that the Communications Committee will discuss changes to the stakeholder questionnaire at their meeting on October 24.

With respect to item #32.14, Kevin McLeod reported that Alberta Health and Wellness (AHW) has commissioned a company to do some work on health indicators (but not specifically health indicators related to air quality).

#### **d. Review workplan for 2006**

The October version of the subcommittee's workplan for 2006 was reviewed and it was agreed that some changes were required because some work has been delayed. For instance, the review of ratings of the 2002 substantive recommendations has to be moved to December. The development of draft recommendations to the board on the review process has to be moved to December as well.

***Action 33.2: Marianne to review the October version of the workplan in the light of the discussion of this meeting and to revise it accordingly.***

#### **e. Content of November status report to board**

Marianne distributed copies of the subcommittee's June status report to the CASA board. Suggestions made with respect to the content of the November status report to the board included:

- there should be no attachments
- the report should state where we are in the review process
- we have come a long way in developing performance measures on emission reduction and energy use and are now looking at possible indicators
- we have looked at the effectiveness of current measures and indicators
- we have under gone a significant review process
- we have had a presentation from Environment Canada on the federal government's work on a health indicator
- the results of the review process will be presented to the board in March.

**Action 33.3:** *Marianne to develop a draft status report and forward it to subcommittee members for review and comment.*

**Action 33.4:** *All to review draft status report and forward comments to Marianne within 48 hours of receiving the draft report.*

**Action 33.5:** *Marianne to finalize, and submit, the status report by November 3<sup>rd</sup>.*

## 2. New Performance Measures – Emission Reductions

### a. Review emission trends

Marianne provided to subcommittee members two tables (see below), one giving the status of data for the emissions reduction performance measure, and the other summarizing data availability for the energy use measure.

**Table 1:Reduced Emissions of substances of concern in areas of casa action**

<b>Suggested Substance of Concern</b>	<b>Data Status</b>	<b>Priority*</b>
<b>H<sub>2</sub>S</b>	<ul style="list-style-type: none"> <li>• some NPRI data</li> </ul>	Do last
<b>NO<sub>x</sub> (NO<sub>2</sub>)</b>	<ul style="list-style-type: none"> <li>• CAC inventory</li> </ul>	Do first
<b>SO<sub>x</sub> (SO<sub>2</sub>)</b>	<ul style="list-style-type: none"> <li>• CAC inventory</li> </ul>	Do first
<b>O<sub>3</sub></b>	<ul style="list-style-type: none"> <li>• O<sub>3</sub> is not emitted, need to look at O<sub>3</sub> precursors</li> <li>• California (California Resources Board) has a list of O<sub>3</sub> precursors</li> </ul>	Drop O <sub>3</sub> but add O <sub>3</sub> precursors; Do last
<b>TRS</b>	<ul style="list-style-type: none"> <li>• includes H<sub>2</sub>S</li> <li>• the CFO may know about data sources and there may be some forestry/pulp and paper data</li> </ul>	Do last
<b>Solution gas</b>	<ul style="list-style-type: none"> <li>• what is solution gas? is it primarily methane?</li> <li>• check EUB reports for data on flared and vented solution gas</li> <li>• we are interested in coal bed methane as well</li> </ul>	Do first
<b>Hg</b>	<ul style="list-style-type: none"> <li>• some NPRI data</li> </ul>	Do first
<b>PM</b>	<ul style="list-style-type: none"> <li>• CAC inventories</li> </ul>	Do first

	<ul style="list-style-type: none"> <li>reported in terms of 3 size fractions: total particulates, less than or equal to 2.5 and 10</li> </ul>	
<b>VOCs</b>	<ul style="list-style-type: none"> <li>CAC inventories</li> </ul>	Do first
<b>CO<sub>2</sub>equiv.</b>	<ul style="list-style-type: none"> <li>EC Greenhouse Gas Inventories</li> </ul>	Do second
<b>CO<sub>2</sub>equiv intensities</b>	<ul style="list-style-type: none"> <li>Alberta Environment has provided</li> </ul>	
<b>CH<sub>4</sub></b>	<ul style="list-style-type: none"> <li>EC Greenhouse Gas Inventories</li> </ul>	
<b>NH<sub>3</sub></b>	<ul style="list-style-type: none"> <li>CAC inventories</li> </ul>	Do first
<b>odour</b>	<ul style="list-style-type: none"> <li>the NRCB and the EUB may have some odour complaint data</li> <li>is there an odour complaint inventory over time broken down by industry?</li> </ul>	Do last
<b>pathogens/ bioaerosols</b>	<ul style="list-style-type: none"> <li>CFO has no data</li> </ul>	Do last
<b>indoor air quality substances</b>	<ul style="list-style-type: none"> <li>No emissions indicator selected</li> </ul>	Do last
<b>CO</b>	<ul style="list-style-type: none"> <li>CAC inventories</li> </ul>	Do last

\* The priority is essentially determined by the relative ease with which the data can be obtained. Data that is available from a government inventory is to be obtained first. Data which is not included in a government inventory but is obtainable in a relatively straight forward manner is to be done secondly. Data that may be more difficult to obtain, or may not exist, is to be worked on last.

With respect to the substances of concern, emission data has not yet been pursued for ozone precursors, total reduced sulfur, solution gas and odour. Some sources of data have been identified for all other substances of concern.

***Action 33.6: Marianne to obtain data for ozone precursors, total reduced sulfur, solution gas, and odour (Actions #s 31.7, 31.8, 31.9).***

Marianne explained that in the graphs of trends in Alberta CAC emissions the label “I + NI Total” stands for Industrial plus Non-Industrial Total emissions. Also, in some graphs, one emission category overwhelms all the others. In such cases, a second trend graph is provided in which the provincial total is not shown so that the other categories can be more spread out.

Richard distributed graphs showing trends in Alberta CAC emissions; these graphs included the projected emissions for 2010 and 2015. He also stated that CAC emission inventories for 2003 and 2005 should be released in June.

With respect to the substances for which CAC inventories data is to be used, the subcommittee made the following decisions:

- ✓ There should be notes provided for the graphs explaining what is included in the various categories and what is the source of the data;
- ✓ What is included in the “provincial total” that is not included in the other specified categories needs to be explained;

- ✓ Need an “other” category (the difference in the provincial total and the total of the various categories also shown in the graphs);
- ✓ The major component(s) of this “other” category should be identified;
- ✓ Need to look at the categories Alberta Environment uses and how they differ from the categories we use;
- ✓ The “I + NI Total” category is not very informative and should be dropped;
- ✓ For NO<sub>x</sub>, SO<sub>x</sub>, VOCs, CO we should use the categories “provincial total”, “oil sands”, “power generation”, “upstream oil and gas”, “transportation total” and “other”;
- ✓ For particulates and ammonia use split (or stacked) graphs, i.e. show one graph which includes the provincial total (with all the specified categories) and a 2<sup>nd</sup> graph with an expanded scale that shows only some of the specified categories (Alberta Environment may be able to do split graphs);
- ✓ For particulates, most of the emissions come from “open sources”; need to identify the components of “open sources”;
- ✓ For now do all 3 particulate parameters but eventually we may cut out one;
- ✓ We should include agriculture as a separate category in all the trend graphs but particularly for ammonia; this means that the “other” category will exclude “agriculture”;
- ✓ We need to explain why we are starting these graphs at 1990;
- ✓ We need to check for statistically significant trends.

Also mentioned during the discussion were the following:

- Alberta Environment’s involvement in this work should be stated;
- We should have informal consultations with stakeholders about the emission reduction performance measure and the data/possible indicators that we are considering;
- The Secretariat can help arrange meetings, etc. for these informal stakeholder consultations but it is up to each sector representative to decide how to inform his/her sector;
- We might consult with stakeholders on whether or not we need all 3 particulate parameters;
- Showing the projections connected to actual values with a dotted line is a good idea, even though Alberta Environment has not checked their validity;
- Eventually we may be able to summarize the trends for the various emission parameters in a bar chart.

Marianne stated that she received data for air releases from Environment Canada for mercury and hydrogen sulphide for the years 2003, 2004, and 2005. Marianne provided graphs for Alberta trends in mercury and hydrogen sulphide emissions for the categories “provincial total”, “power generation”, “upstream oil and gas”, and “oil sands”. Richard suggested that the trends evident in these graphs may be due to changes in reporting rather than emissions. Apparently facilities come and go continuously. Richard looked at trends using data from facilities that reported consistently during the period 2000 to 2004, inclusive. Richard has the whole NPRI database, but does not have the data for 2005, which is not yet finalized.

With respect to mercury and hydrogen sulphide, the subcommittee agreed on the following:



- ✓ We should produce 2 graphs of emission trends for each of mercury and hydrogen sulphide, one using all reporting facilities and the other using only the consistently reporting facilities for the period 2000 to 2005;
- ✓ Graphs need to be produced for three categories, “provincial total”, “fossil fuel power generation” and “oil sands”;
- ✓ The graphs should start at 2000 and should have consistent categories, i.e. need to resolve the differences between the categories used by CASA and those used by Alberta Environment.

Concern was expressed about the large number of graphs we will produce; it is expected that we will produce a comprehensive report, which will include all the graphs we will produce, plus a small summary report (which will contain only a few graphs/charts).

***Action 33.7: Marianne, Bob and Richard to expand data sets where possible, develop consistent emission categories, revise the trend graphs and test for statistical significance of the trends.***

Marianne distributed a graph of Alberta GDP. Richard provided calculations of Alberta greenhouse gas emissions and GDP, both actual and with fitted linear and exponential curves. From these values (and equations) of greenhouse gas emissions and GDP, greenhouse gas intensities were calculated and graphed. The fitting of linear equations to the emission data and linear and exponential equations to the GDP data allows an estimate of the magnitude of the trend to be made. The subcommittee agreed that initially we will use actual emissions and actual GDP (for a constant dollar) to calculate emission intensities and then we will use the same statistical technique to determine the statistical significance of the trend in intensities that we use for the other substances of concern.

Marianne explained that in the graphs of Alberta greenhouse gas emissions she produced, the category “Fossil fuel” includes fugitive emissions. The subcommittee decided that fugitive emissions should be shown as a separate category because the work of the Flaring/Venting Project Team involves fugitive emissions.

Subcommittee members agreed that we are hampered by the fact that CASA and Alberta Environment have been using data collected, and combined, in different ways. It was agreed that as much as is possible CASA should use Alberta Environment methods.

***Action 33.8: Marianne, Bob and Richard to develop a recommendation as to how Alberta emission trends are to be prepared and tested.***

Greenhouse gas intensity is defined as total greenhouse gas emissions per unit of production. When considering greenhouse gas intensity for all of Alberta, then the unit of production is GDP. When considering the greenhouse gas intensity of an industry, then the unit of production is whatever the industry produces. For example for the electric power generation industry, the greenhouse gas intensity would be greenhouse gas emissions per kwatthr.

The subcommittee agreed to discuss the use of emission intensities with their stakeholders before a final decision is made about using absolute values and/or intensities. For the time being, we are working with both.

**Action 33.9:** *Subcommittee members to consult with their stakeholders on the usefulness of the potential indicators we are considering, on the need for 3 measures of particulates and on the question of absolute emissions versus emission intensities.*

### 3. New Performance Measures – Energy Indicators

#### a. Review draft indicators

The potential indicators the subcommittee is considering are given in Table 2.

**Table 2: Energy use as an indirect measure of air quality in areas of CASA action.**

Potential Indicator	Data Available	Comments
absolute fuel sold (for gasoline and diesel)	gasoline sold and diesel sold for road travel is available from Statistics Canada	<i>[Alberta net sales of gasoline + Alberta net sales of diesel oil]</i>
fuel sold per capita (for gasoline and diesel)	population is available from Statistics Canada but not separated according to gasoline or diesel	<i>[Alberta net sales of gasoline + Alberta net sales of diesel oil] / Alberta population</i>
fuel sold per vehicle (gasoline and diesel)	vehicle registrations are available from Statistics Canada but not separated into gasoline and diesel	<i>[Alberta net sales of gasoline + Alberta net sales of diesel oil] / Alberta total vehicle registrations</i>
energy intensity		<i>still need to look into what data is available</i>
energy mix indicator		<i>AENV to calculate</i>

Marianne distributed tables of Statistics Canada data on Alberta sales of fuel used for road motor vehicles, Alberta motor vehicle registrations, Alberta expenditure-based gross domestic product, and Alberta population. The tables Marianne distributed were samples only, to get data records for the time period of interest to the subcommittee, payment is required. It seems the cost is about \$3 per record, so obtaining the required data should be relatively cheap. Donna stated that the subcommittee still has \$ 118.47 in its external account (left over from Alberta Environment’s contribution for the analysis of the last stakeholder survey), which can be used to fund the cost of the Statistics Canada data.

Marianne also distributed graphs of Alberta net sales of gasoline, Alberta net sales of diesel oil, and Alberta population. The first 3 indicators listed in Table 2 are to be based on [Alberta net sales of gasoline + Alberta net sales of diesel oil].

**Action 33.10:** *Marianne to obtain the required data for the fuel sold indicators from Statistic Canada and prepare trend graphs for the indicators.*

*Action 33.11: Marianne to obtain energy intensity and mix data and prepare trend graphs.*

## **4. Human Health Indicator**

### **a. Presentation by Environment Canada**

Markus Kellerhals (Head of the Air Quality Science Group) from the Edmonton office of Environment Canada presented a description of the federal governments Air Quality Health Index (AQHI) and also a comparison between the Alberta Environment Air Quality Index (AQI) and the AQHI (see the attached). The AQHI is based on actual hospital admission data and reflects the additive effects of multiple pollutants. The pollutants involved in AQHI are ozone, particulates, nitrogen dioxide, and sulfur dioxide and the index is based on rolling 3 hr. concentrations. The main health impacting pollutants are ozone, particulates and nitrogen dioxide.

### **b. Discussion**

Markus mentioned that the AQHI is not intended to be used as a long-term indicator of air quality health effects, rather, it is intended to support personal health protection just like the UV index. Health Canada may be working on a long-term air quality/health indicator.

A national meeting on the AQHI would take place in December in Ottawa. (Actually, CASA received an invitation to this meeting, but no one seems to be available to attend.) Environment Canada is interested in having a meeting on AQHI in Alberta in the spring and would be interested in having CASA organize such a meeting.

Kevin mentioned that Alberta Health and Wellness is interested in having performance indicators for various health outcomes.

### **b. Next steps**

The next steps for the subcommittee are:

1. wait and see what the various agencies come up with
2. consider organizing the spring meeting on the AQHI

*Action 33.12: Donna to consult CASA stakeholders with respect to CASA organizing a meeting on the AQHI for Environment Canada.*

## **5. Review/Revise Stakeholder Questionnaire**

This item was deferred to the next meeting.

## **6. Status Reports**

### **a. Airshed Zones” use of air quality indicators**

The Airshed Council agreed with the subcommittee's suggestion that the airshed zones calculate the CASA air quality performance indicators for their regions. Apparently, some airsheds already provide passive data to the CASA data warehouse.

**b. Airshed Zone indicator**

The Airshed Council members were unanimous in rejecting our suggested indicators: number of monitoring stations in airshed zones, per cent of Alberta population in airshed zones, and percent of the province covered by airsheds. They suggested that any CASA airshed indicator should be related to the support from CASA for airsheds.

*Action 33.13: The subcommittee to consider if a question re CASA support to airsheds can be added to the stakeholder questionnaire.*

**c. Performance measure #3**

No progress has been made with respect to obtaining the outstanding assessments of implementation.

*Action 33.14: Marianne to follow-up on the outstanding assessments.*

**d. Review of recommendations to the board**

This item was deferred to the next meeting.

## **7. Next Meeting**

The next meeting of the Performance Measures Subcommittee will be on December 18 from 8:30 am to 3 pm.