

**Alberta Expert Review: Energy Efficiency Commercial/Institutional Protocol**  
**Direct Energy (Suite 1000, 111 – 5 Ave SW Calgary)**  
**September 23, 2008**  
**10am-12pm**

Attended In-person: Kate Richter (Direct Energy) Brian Tyers (Stantec), Duncan Keyon (BlueSource Canada), Renee Levesque (EPCOR), David Barry (Enmax), Stephan Wehr (Delphi Group), Chris Thrall (Direct Energy), Gordon Shymko (G.F. Shymko & Associates)

Attended by phone: John Cowan (Environmental Interface, contracted by ClimateCHECK) and Patrick Hardy (ClimateCHECK).

Written Comments Received: Matt McCulloch and Dave Lovekin (Pembina).

Declined: Klaas Rodenberg (Stantec), Richard Caldwell (Vital Engineering), Derek Heslop, Tim McGinn (Cohos Envamy), Jesse Row (Pembina), John Rillet (C3), Ken Lau (BC Hydro), Shane Norup (OEE), Phil Jago (OEE).

Kate Richter (KR) - Introductions made by all participants.

KR – Highlighted and reinforced the purpose of the meeting is to submit the proposed draft protocol for consideration by Alberta Environment for use within the Alberta Offset System.

KR – Reviewed the four Principles of Review Process as outlined by C3/Alberta Environment: Environmental Integrity, Usability-reasonableness (to balance off the environmental integrity), Adapting precedent set elsewhere, and Life Cycle analysis (as outlined by the ISO 14064 framework).

Based on the feedback from this meeting and additional written comments received the protocol will be revised and submitted to the group for additional review. If “no sustained objection” is received from the expert review then the protocol will be submitted to C3/Alberta Environment for broader stakeholder review and finally approval by Alberta Environment.

Pat Hardy (PH) – [Provided an overview of the protocol] and suggested to begin the review by going through section by section, beginning with Section 1.

### **Section 1.0**

Brian Tyers (BT) – Why does the protocol provide upfront justifications?

PH – ISO requirement for this justification but this is also less onerous on the project development not to have to provide this information in the project documentation.

BT – Why IPMVP? Who’s the targeted audience? Where is IPMVP available for review?

PH – IPMVP is very good for Energy Efficiency standards and is a recognized international standard for measuring, monitoring, and verifying energy savings.

The user needs to be versed in energy efficiency for them to be able to use this protocol which is typical for all Alberta Environment protocols.

We will include information of where to find IPMVP for review. EVO website will be listed as they manage the IPMVP.

Duncan Keyon (DK) – Suggest adding an overview on requirements for reader, as outlined in all Alberta Environment approved protocols.

PH – Will include an additional paragraph upfront in this section which outlines the reader's requirements.

BT – Overall, I found the protocol to be repetitive with the same tables being listed multiple times.

PH – This is a requirement of ISO and the Alberta Environment

BT – Suggest listing a “check-list” of the key steps required within this protocol so that reader can better understand all the necessary steps. An example summary of ideas.

### **Section 1.1**

David Barry (DB) – Is the residential included in the scope?

KR – We wanted to focus on commercial (given project feasibility) and felt that residential protocol should be treated differently.

PH – Single family may have different monitoring requirements.

KR - The Pembina Institute has commented that the two sectors should be separated.

DK – This protocol could be bundled with other protocols and this should highlighted within the protocol.

John Cowan (JC) – Demand Side Management (DSM) for residential adds another layer of complexity (outlined the differences between the changes to sample vs. actual measurement).

DK – Alberta Environment has a draft protocol for residential. Suggest excluding the mention of single-family residential in the list of potential projects in this section as this protocol may not have the flexibility to deal with it.

Stephan Wehr (SW) – If the protocol includes residential then it needs to outline specific requirements for monitoring and QA/QC but if including residential should also outline requirements for aggregation.

PH – Remove reference to Residential – single-family.

DB – What provinces are the most advanced on GHG regulations and Offsets?

KR – Alberta is the first jurisdiction to regulate GHG emissions in North America.

SW – ON NO<sub>x</sub>/SO<sub>2</sub> program is another area to consider as it had “offsets” for energy efficiency.

JC – Very familiar and it has been considered in the development of this protocol as I authored the work around it.

BT – Outline ownership issues in Section 1.1 and reference section 1.1.2.3 upfront.

(no comments were received for sections between)

### **Section 1.3**

BT – Clarification required with ASHRAE reference

PH – Will update with ASHRAE 90.1

Gordon Shymko (GS) – Throughout Canada many different versions of ASHRAE are used and it isn't constant between provinces and federal reference.

DK – Add reference to review listed standards for further information and reference when determining baseline.

## **Section 2.0**

PH – Please note, we left out reference to cement and glass – which will be included

DK – Why list everything and not just be more macro level details?

PH – This list may not include everything but it's better to be more specific (as required by ISO). We'll need to explain the list and why target raw materials (will include paragraph upfront).

SW – Expand to include other GHG like coolers and dealing with SF<sub>6</sub>. You should consider that increases will need to be explained.

JC – We will look to include the secondary effect of GHG impacts and affects.

DK – Other Alberta Protocols have these outlined and suggest reviewing them for guidance.

## **Section 2.2**

BT – Section 2.2.1 needs more clarity and should outlined modeling and other requirements. It might increase the clarity if steps are included.

SW – Suggest adding details on the end of life and use of performance standards. The use of industry standards should be outlined to deal with failed or pre-mature failure or end of equipment life.

PH – The surplus adjustment should be used to deal with this issue.

GS – There is a bigger issue which I have two main concerns. First, if you set a new baseline – when is a new building method an established building method? Volume 3 for new construction validates building for design intent. An example, if building project uses X kwh but uses Y kwh, then the company establishes the baseline as Y vs. X.

JC – This is outlined in IPMVP and hasn't been outlined in the protocol. We will address this by adding the specific section references within the standard

GS – Suggest staying away from setting the Baseline against regulations as each province is different, not comparable, and doesn't capture new builds.

PH – Does the group believe that it's feasible to use a new building as baseline? If so, then emission reductions are going to be under reported?

GS – ASHRAE 90.1 standard and MSG don't meet this requirement

SW – CDM requires that projects have to go above laws/regulations unless it can be proven that the laws/regulations are not being enforced/followed.

Chris Thrall – Why not grant these credits?

SW – Don't want to over credit with performance standards.

GS – Regulations don't reference energy efficiency

SW – Is it possible to outline guidance to deal with this in the protocol

GS – LEED is trying to do this with performance standards for Canada. In the US, the EPA has Target Finder and data from the U.S. Department of Energy (DOE) Energy Information Agency's 2003 Commercial Buildings Energy Consumption Survey (CBECS).

DB – Alberta Government is working on new regulations for energy efficiency

JC- Establish law as ASHRAE 90.1 ('99)

GS – Support use of ASHRAE 90.1 ('99) as this is the practical solution

SW – This should be reviewed every 5 years and allow participant the option for GHG Protocol Performance Standard.

JC – Or consider what is law or common practice.

BT - The protocol should outline a default of using the standard of the day that is no more than 3 years prior to the commission date of building.

SW – Suggest including an explanation of how to implement ASHRAE.

PH – Suggest use of – equipment at end of life. New buildings define baseline better – ASHRAE 90.1 ('99) with 3 years back at commission date. The project proponent must justify simulation used.

#### **Section 2.2.4.1 and 2.2.4.2**

DK – What are threshold for routine adjustment?

JC – Changes occur like occupancy and types of use.

DK – Outline routine adjustments

PH – ADD Statement of justification for making routine or non-routine adjustments, make IPMVP standard more clear, give examples in Appendix.

DK – Provide further comments on environmental integrity.

#### **Section 2.4**

SW – Figure 5 and table 4 should offer further details on justification

#### **Section 2.5**

DK – Why is the 10% chosen?

JC – Arbitrary number picked.

GS – Increase percentage as simply would be the only one picked – 10% isn't large enough of a discount. Suggest 20-30%

DK – Provide justification for the number used.

BT et al – Table 9 clarify where and how the emissions factors were derived or obtained. In particular Alberta Electricity Grid value.

#### **Wrap-up**

KR – Given the time restraints, I'd request that further comments be submitted by email by end of week (Sept 26, 2008).

#### **Next Steps**

Send out minutes for review by group

Incorporate comments and send out updated protocol based on comments received

Send out revised protocol for further comment

If not further comments are received, submit to Alberta Environment as “No Sustained Objection” has occurred.

## Additional Comments received post-Expert Group Review

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

From: Gordon F. Shymko  
Sent: Wednesday, September 24, 2008 2:13 PM  
To: Richter, Kate  
Subject: DE EE Quantification Protocol - Final Comments

Hi Kate,

First, I want to say that overall this is a very well put together document, with little to criticize beyond the few points brought up in the meeting (with some of the issues being systemic to the industry rather than reflecting fault in the document itself). Well done.

My final comment concerns 2.5.1.6, specifically the bullet point regarding calibration error for Option D. The error ranges as cited require expansion to be practically workable. The framework that we typically subscribe to in our projects is as follows:

Calibration accuracy objectives:

- +/- 10% for total annual energy use
- +/- 10% for total annual energy use for each energy source
- +/- 15% for total monthly energy use
- +/- 15% for monthly energy use for each energy source for any month with use higher than 30% of the peak month
- +/- 15% for end-uses on an annual basis
- +/- 15% for end-uses on a monthly basis for any month with use higher than 30% of the peak month

Other than the above I have no further comments at this point.

Thank you for the opportunity to be involved in this.

Regards,

Gord Shymko  
G. F. Shymko & Associates Inc.

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**From:** Tyers, Brian  
**Sent:** Thursday, September 25, 2008 1:59 PM  
**To:** Richter, Kate  
**Subject:** RE: For Review: Energy Efficiency Protocol

Hello Kate:

The following are points that I did not get a chance to note during our session on Tuesday:

- 1) The title of the protocol should note that it is for commercial and institutional buildings.
- 2) Pages 16 and 26 in Tables 1 and 3 - Item P11 and B11 Decommissioning of ECM equipment - should there be consideration for energy saved through the recycling of decommissioned materials noted.

- 3) Page 30 in Section 2.5.1 notation or reference to Section 2.5.1.2 interactive effects should be made in the determination of energy savings. Table 5 Option A and B should also make reference to Section 2.5.1.2. As it stands right now it appears to be an after thought and may be missed in the initial "Determination of Energy Savings".
- 4) Page 39 Section 2.5.1.6, third bullet - need explanation of the CV (RMSE), it is not defined in this document.
- 5) Page 39, as we mentioned at the end of the session, electricity grid emission number value needs to be explained.

look forward to the next revision.

Best Regards  
**Brian Tyers**  
Consultant, Energy Management  
Stantec

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**From:** Gordon F. Shymko  
**Sent:** Thursday, October 23, 2008 4:40 PM  
**To:** Richter, Kate  
**Subject:** Re: For final review: Alberta Energy Efficiency Protocol (revised version)

Hi Kate,

At this point I only have a couple of comments. It will be interesting to see how this does in public review.

Section 2.2.3.2 really should cite a specific version of ASHRAE 90.1. I recall that I suggested 90.1-99 for a number of reasons related to where the Alberta market current stands on the energy efficiency curve.

I am still not entirely comfortable with the eligibility factors for simple vs. advanced approach. I still think that the simple factors are too high and will result in most projects defaulting to that approach. However, let's see what the public thinks....

Regards,  
Gord Shymko