

November 3, 2011

City of Kimberley  
340 Spokane Street  
Kimberley, BC V1A 2E8

Attention: Troy Pollock, MCIP  
Manager, Planning Services

**RE: Sun Mine 1 MW Project - Energy Output Model Verification  
Kimberley, BC**

---

*Focus Corporation* (Focus) has teamed with *Applied Engineering Solutions Ltd* (AES) to review and verify the computer energy model forming the basis for the planned *Sun Mine* energy capture project to be situated within the *City of Kimberley* municipal limits specifically on approximately 5 hectares of the *Teck Resources'* decommissioned concentrator mine site. The *Sun Mine* project is expected to begin as a 1 mega-watt peak photovoltaic power plant on what is now classified as a brownfield lands.

Mr. Iain Barnes, P.Eng. of AES has experience relating to several facets of alternative energy including BC Hydro interconnects, small hydro-electric projects and several recent solar energy projects around the Victoria, BC region. Mr. Jared Bunch, P.Eng. of Focus has gained engineering experience while working on multiple solar energy projects in the state of Nevada.

The energy model for the *Sun Mine* project was initially developed by Mr. Michel de Spot of *EcoSmart Foundations Inc.* (EcoSmart), based out of Vancouver, BC. Focus and AES conferenced with Mr. de Spot on November 1, 2011 to gain an understanding of the *Sun Mine* model inputs and assumptions. Focus and AES verified EcoSmart's energy model using the software program "RETScreen.4-1. RETScreen", which is an energy decision-making software endorsed by Natural Resources Canada and software AES has used on other energy projects.

Focus and AES concluded that the input/assumption data used by EcoSmart to produce the *Sun Mine* energy model is reasonable and conservative. All of the selected equipment is commercially available and does not represent any experimental or on-off technology. Efficiency ratings for the proposed photovoltaic (PV) modules, electronics and degradation are all industry typical. Of note were Mr. de Spot's observations of high albedo (due to snow on the ground) and low temperature conditions that combine to produce better than average real world results at the proposed *Sun Mine* site.

EcoSmart utilized the weather model information recorded at the Cranbrook airport, which represents 36 years of historical weather data, thus increasing the confidence of the predicted energy production.

In March of 2011, the *City of Kimberley* installed two photovoltaic modules at the *Sun Mine* site. These two modules included a single fixed unit and a single axis azimuth tracking mount, similar to that proposed for the site. The recorded data collected from these pilot modules coincides with theoretical daily solar cycles for the area.

Further to the information presented to Focus and AES by EcoSmart specific to the *Sun Mine* computer energy model, Focus and AES confirm that the model is based on sound theoretical data and conservative assumptions in-line with currently available technology and methods for predicting energy production of this type. The output of the module calculates a requirement of 5,556 units of the poly-Si – Day4 48MC 180 photovoltaic cells manufactured by Day4 Energy.

Should you have any questions regarding the energy model review, please do not hesitate to contact us.

Sincerely,

**FOCUS CORPORATION**



Jared Bunch, P.Eng.

**FOCUS**

Focus Corporation  
303-535 Victoria Avenue North  
Cranbrook, BC, V1C 6S3

**APPLIED ENGINEERING SOLUTIONS LTD**



Iain Barnes, P.Eng.



Applied Engineering Solutions Ltd.  
3rd Floor, 1815 Blanshard Street  
Victoria, BC, V8T 5A4