

ENVIRONMENTAL ADVISORY COMMITTEE

Wednesday 15th September, 2010

Time: 4:30 – 6:00 p.m.

MINUTES

Place: OL 127

ATTENDANCE:

Present: B. Christianson, R. Reid, J. Van Hamme, P. Powers, H. Parsons, D. Crespin-Mueller, B. Klohn, S. Purdy, G. Hayes, L. Tabata, T. Owen, T. Dickinson, J. Sparks

Regrets: J. Murray

Notetaker: S. Jackson

Guests: J. Gudjonson; D. Whiting; B. Scott; K. Bronnimann

1. MEETING CALL TO ORDER

P. Powers in the Chair. The meeting was called to order at 4:30 pm.


2. ADOPTION OF AGENDA

On motion duly made, it was *RESOLVED* to approve the agenda as circulated.

3. ADOPTION OF MINUTES

On motion duly made, it was *RESOLVED* to approve the minutes from the meeting held on 14 April, 2010 as circulated. S. Jackson

4. JIM GUDJONSON, TRU ENERGY MANAGER

J. Gudjonson, TRU's Energy Manager, gave a PowerPoint presentation re. energy usage at TRU – see attached 

- J. Gudjonson has been in his position since late January 2010.
- TRU's annual energy usage is nearly 35 million kilowatt hours per year. (ekWh)
- Gas usage is very low during July/August because TRU uses electricity to cool in the summer months; therefore electricity usage is higher during the summer.
- J. Gudjonson has reviewed 10 major buildings, and buildings are being retrofitted which should lead to a saving of approximately 10% of the energy bills.
- Smartbars and power saving software are being utilized.
- A lighting retrofit project has been undertaken in the Arts & Education building.
- Continuous Optimization Program (COP) – The BC Centre for Open Learning has been submitted for approval into the COP program. The Program looks at energy use by minute, by hour etc. and manages it accordingly.
- TRU needs a purchasing policy that looks at how much energy different items use. This is currently a resource issue (TRU doesn't have anybody to review purchases for

energy usage).

- Student energy metric – there are more students on campus during the Fall and Winter months than the Summer months; however, we use approximately 5 times more energy in the summer. Do we need all the buildings on campus to be air conditioned all summer? J. Gudjonson to look at temperatures. Many buildings are cold in summer. Better metrics and better controls will enable us to get the most out of our energy. People need to adjust their clothing according to the temperature (bring a sweater, etc.) – how do we educate people about that?
- TRU imposes stricter guidelines than is legally necessary, eg. it keeps the air temperature in a narrower band than it needs to, which results in increased energy usage.
- Dark film on windows and doors (e.g. in the Clock Tower building) – many staff think the temperature is more even, but the film on doors is a safety issue – people coming into the building can't see people coming out.
- In general, Jim pleased with progress that's been made.
- J. Gudjonson was thanked for making his presentation

5. KAMLOOPS SUSTAINABILITY ATLAS – DAVE WHITING

D. Whiting was introduced as a consultant planner and geologist. He also teaches one NRS course, and is involved with the Red Tree Project with the School of Tourism, and with CURA. His presentation included the following highlights:

- He has been involved with the Kamloops Sustainability Atlas for 6 years.
- See website www.kamloopsatlas.com
- The project started with T. Dickinson receiving a request for TRU to attend a workshop. Tom offered to host the workshop at TRU, and sent the project over to Natural Resource Science which is when D. Whiting got involved. A 1-day conference on internet mapping was organized, the outcome of which was real interest in creating a community atlas for Kamloops. The focus was on habitat, and having an on-line atlas associated with wildlife habitat. Various Foundations were approached for funds, D. Whiting became the project coordinator, and over the following years the atlas was built. The atlas evolved from covering just wildlife habitat to include other issues, so it became a sustainable community atlas.
- The atlas now consists of a website that explains the atlas, and the actual online web atlas itself. There are lots of different layers to the atlas (eg flood plains). Most layers come from non-government organizations. The Provincial Government atlas only shows Provincial Government projects; likewise the Municipal Government atlas only shows Municipal Government projects. But the Kamloops Sustainability Atlas has links to many servers, and so can link to information stored on those remote servers and combine it within the layers of the Kamloops Sustainability Atlas.
- D. Whiting explained that he is coordinating the Kamloops Sustainability Atlas “off the corner of his desk”. He is looking for a home for this important project, which would also provide an opportunity for sharing student and faculty research results. This would also give students the opportunity to coordinate, and make map layers.
- D. Whiting estimated that much could be accomplished with a coordinator working 1 day a week. The person would need good communication and project management skills, but not necessarily technical skills as the technical work is done by contractors. D. Whiting is prepared to undertake this role on a contract, and estimated a budget of \$15,000 could get the initiative off the ground.

- This is very much a cross-disciplinary initiative, so it would need to be housed appropriately. It was suggested that the Centre for Teaching & Learning might be a good fit for this initiative. The Library would also need to be involved. S. Purdy suggested that D. Whiting prepare a proposal to hire one part-time coordinator housed in the Centre for Teaching & Learning. T. Owen asked if we could get a 1-year grant from the Steering Committee of Senate for this. It was also suggested that someone reviews the initiative to see if it fits within CURA's guidelines.
- The Geography Department could make this a core course to teach students about mapping. Service Learning courses could be developed.
- B. Scott enquired whether we could make this initiative cost recovery. There must be engineering firms that would use this information, but this avenue has not been explored with our industry partners.
- D. Whiting was thanked for his presentation.
- D. Whiting can be contacted at dave.whiting@shaw.ca

6. DRAFT ENVIRONMENTAL POLICY – TOM OWEN

T. Owen referred to the draft Environmental policy that had been circulated just before the meeting. This is a revised version of the draft policy that was presented to the EAC earlier in the year. T. Owen is looking for feedback on the draft policy within the next 2 weeks, as he is looking to get the policy through the consultation process so that it can be put on the Board agenda.

T. Owen

7. DIRECTOR'S REPORT – TOM OWEN - see attached

- TDM – 8 good proposals have been received, which have been narrowed down to 1.
- T. Owen wanted to publicly thank B. Scott for organizing the orientation activities, and G. Hayes for organizing the annual environmental sustainability golf tournament.
- T. Owen suggested that EAC members bring their own cups to EAC meetings, so we won't have to use disposable cups.
- T. Owen has been approached by the Finance Department about staff buying carbon offsets when they travel, so we need to develop a policy around this. T. Owen doesn't think buying carbon offsets is necessarily the best use of the money, and will come up with an alternative that will benefit TRU. If anyone has any comments or concerns, please direct these to T. Owen.

8. ANY OTHER BUSINESS

B. Scott is looking for bios for EAC members.

9. FUTURE AGENDA ITEMS:

ENERGY MANAGEMENT AT TRU EAC MEETING

PRESENTED BY JIM GUDJONSON
September 15th, 2010



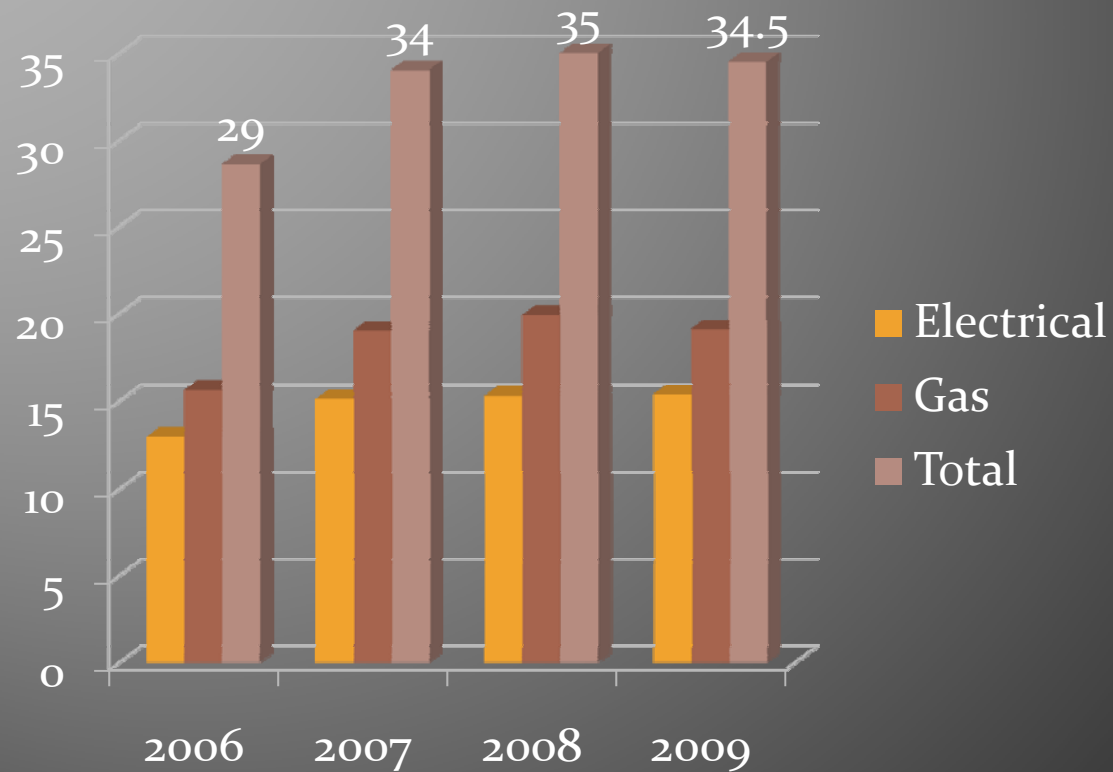
Presentation Overview

- REVIEW OF CAMPUS AND UPDTAED ENERGY USE
- ENERGY REDUCTION THROUGH TECHNICAL CHANGES (LAST QUARTER PROGRESS)
 - CAMPUS ENERGY AUDIT/STUDIES
 - ENERGY REDUCTION PROJETCS
 - PSECA PROJECTS- RENEWABLES
 - CONTINUOS OPTIMIZATION PROGRAM
- ENERGY REDUCTION THROUGH BEHAVIOUR CHANGES

Total Energy use 2006-2009

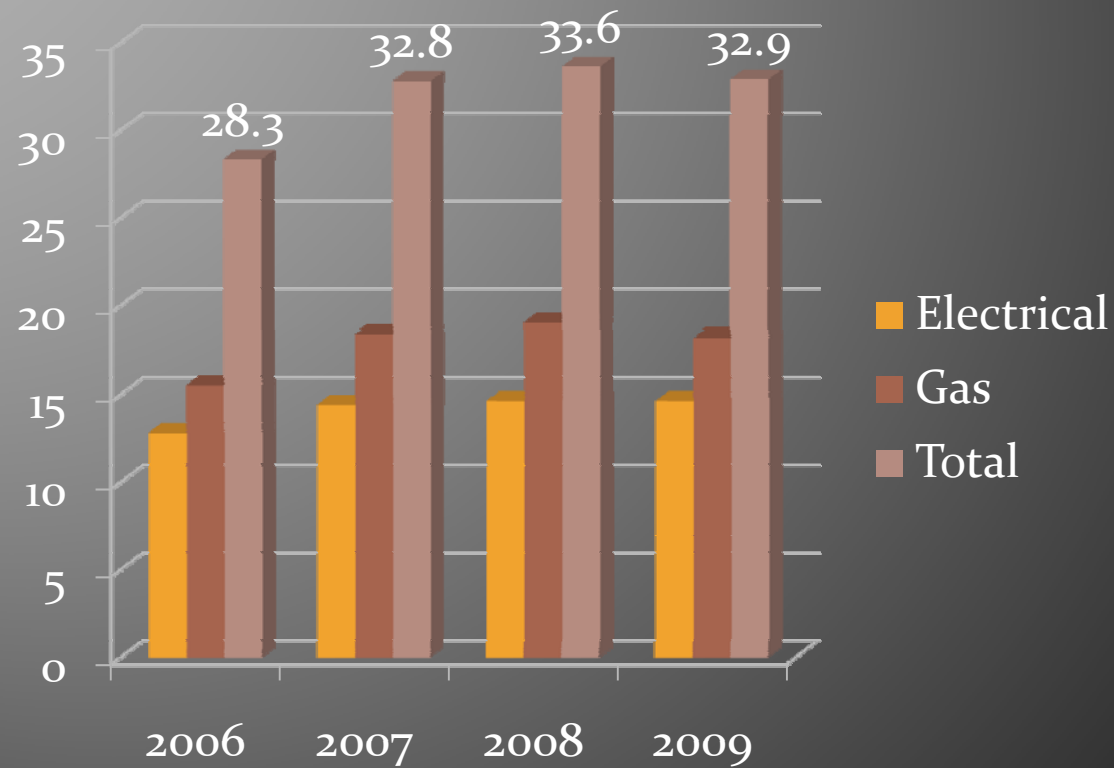
MEASUREMENTS IN (ekWh) MILLIONS

UP ~3.5% PER YEAR~

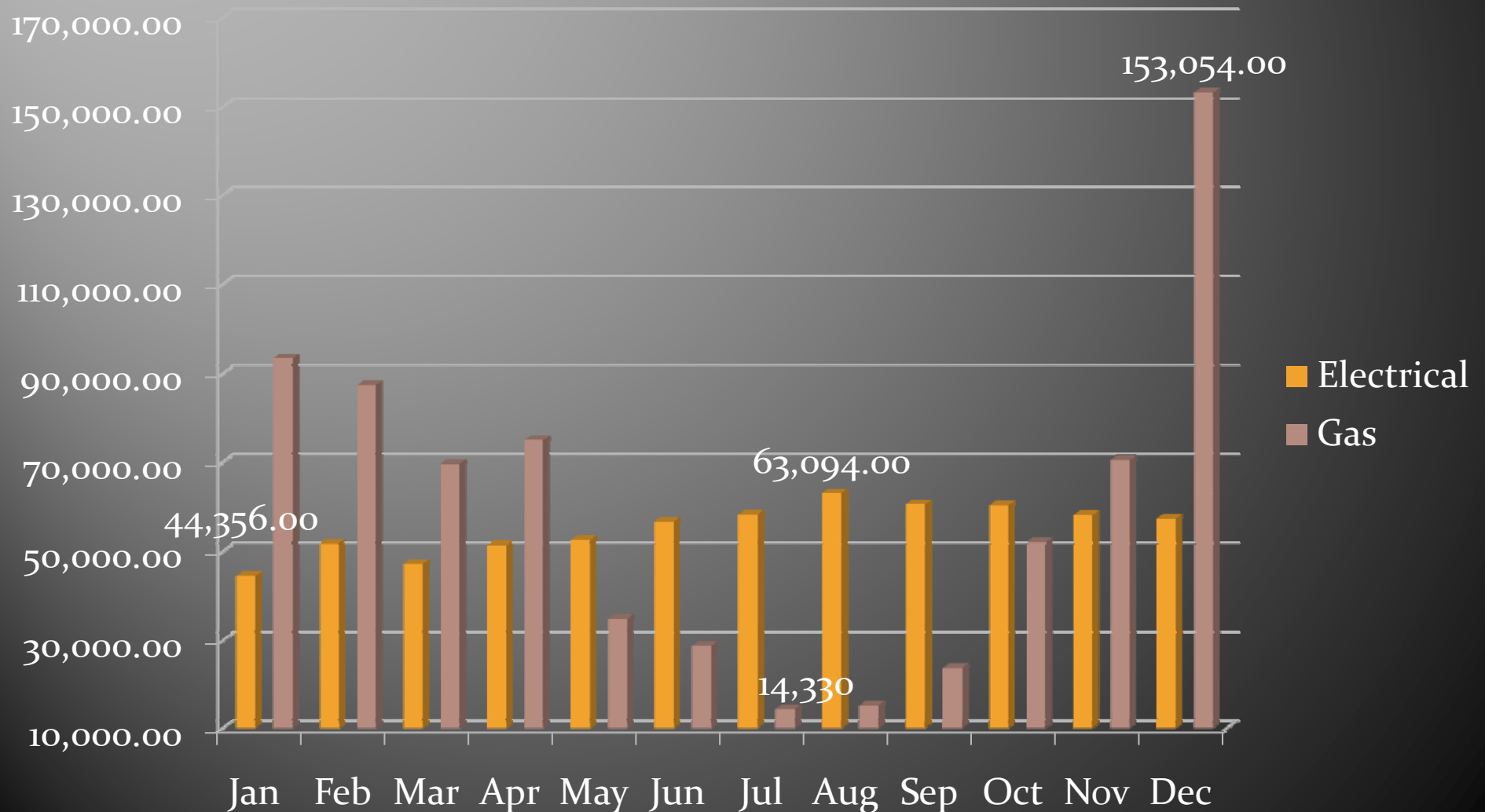


ANNUAL ENERGY PERFORMANCE

BEPI (ekWh/FT² /YR)



Monthly Electrical/Gas Consumption Costs 2008



SECOND QUARTER PROGRESS

ENERGY REDUCTION THROUGH TECHNICAL IMPROVEMENTS/RETROFITTING

**PRIMARY BUILDINGS AUDIT- PRISM ENGINEERING
CONDUCTED COMPREHENSIVE AUDIT/STUDY OF 10
LARGER BUILDINGS ON CAMPUS**

- ❑ **COMPLETED JULY 31ST**
- ❑ **PRELIMINARY REPORTS INDICATE HIGH POTENTIAL
FOR ENERGY SAVINGS- SEE ATTACHED SUMMARY**
- ❑ **REDUCE BEPI FROM ~33 (ekWh/FT² /YR) to ~30 (ekWh/FT²
/YR)**

PRELIMINARY ANALYSIS OF TRU'S FACILITIES

Bldg Code	Building Name	Area (m ²)	Year Built	Estimated Energy Savings Potential
OM	Old Main	19,682	1970	High
TT	Trades & Technology	10,500	1997	High
CAC	Campus Activity Centre	7,200	1992	High
CA	Culinary Arts	1,859	1970	High
A&E	Arts and Education	6,100	1991	High
<u>Subtotal – High Savings Potential</u>		<u>45,341</u>		
GYM	Gymnasium	3,800	1980	Medium
CT	Clock Tower	3,200	1990	Medium
<u>Subtotal – Medium Savings Potential</u>		<u>7,000</u>		
IB	International Building	6,500	2005	Low
SC	Science	10,800	1980	Low
LIB	Library	3,500	1975	Low
AHT	Animal Health Technology	1,180	2002	Low
MDC	Materials Distribution Center	1,690	2006	Low
<u>Subtotal – Low Savings Potential</u>		<u>23,670</u>		
<u>Total – Walk Through Assessment</u>		<u>76,011</u>		

SECOND QUARTER PROGRESS PROJECTS

SMART BAR REPLACEMENT-NEARING COMPLETION

- ❑ 1300 COMPUTERS ON CAMPUS
- ❑ \$15000 (300,000 kWh) POTENTIAL SAVINGS WITH SMART BAR (SHUTTING OFF PERIPHERALS, PHANTOM LOADS)
- ❑ POTENTIAL REDUCTION OF 80% OF WORK STATION ELECTRICAL CONSUMPTION IF SMART BAR AND POWER SAVE SOFTWARE ARE WORKING TOGETHER
- ❑ LESS THAN 2 YEAR RETURN

SECOND/THIRD QUARTER PROGRESS Projects

ARTS AND EDUCATION BUILDING LIGHTING RETROFIT

- T-12 TO T-8
- 230 FIXTURES (460 BALLASTS, 920 LAMPS)
- ANNUAL SAVINGS OF 3660 KWh (\$2400)

SECOND/THIRD QUARTER PROGRESS PROJECTS

- ❑ CREATE AN INVENTORY OF ALL ENERGY RELATED EQUIPMENT ON CAMPUS (LIGHTING, HEATING, COOLING) –NEARING COMPLETION
- ❑ ENTER EQUIPMENT INTO DATA BASE
- ❑ CO-OP STUDENT HIRED APRIL 30-COMPLETED AUGUST
- ❑ DATA BASE WILL TRACK RETROFITTING AS WELL AS ASSIST IN MAINTENANCE (GROUP RE-LAMPING)
- ❑ PRISM STUDY INDICATED MORE THAN THE ORIGINALLY PROJECTED 10% OF ENERGY IS CONSUMED BY THE SECONDARY BUILDINGS (CLOSER TO 25%)

SECOND/THIRD QUARTER PROGRESS PROJECTS

- SECONDARY BUILDINGS LIGHTING RETRO-FIT
- SIGNIFICANT AMOUNT OF T-12'S IN SECONDARY BUILDINGS
- PORTABLE DATA LOGGER TO TRACK SAVINGS

PSECA FUNDING RELATED PROJECTS

- SOLAR DOMESTIC HOT WATER (DHW) PROJECTS – OLD MAIN, CULINARY ARTS, CAMPUS ACTIVITY CENTER- ~ \$220 k IN PROJECT COSTS \$40k FUNDING APPROVED
- SOLAR AIR PROJECT – SCIENCE BUILDING PRE-HEATING MUA AIR FOR LABS 120K PROJECT COSTS

CONTINUOUS OPTIMIZATION PROGRAM

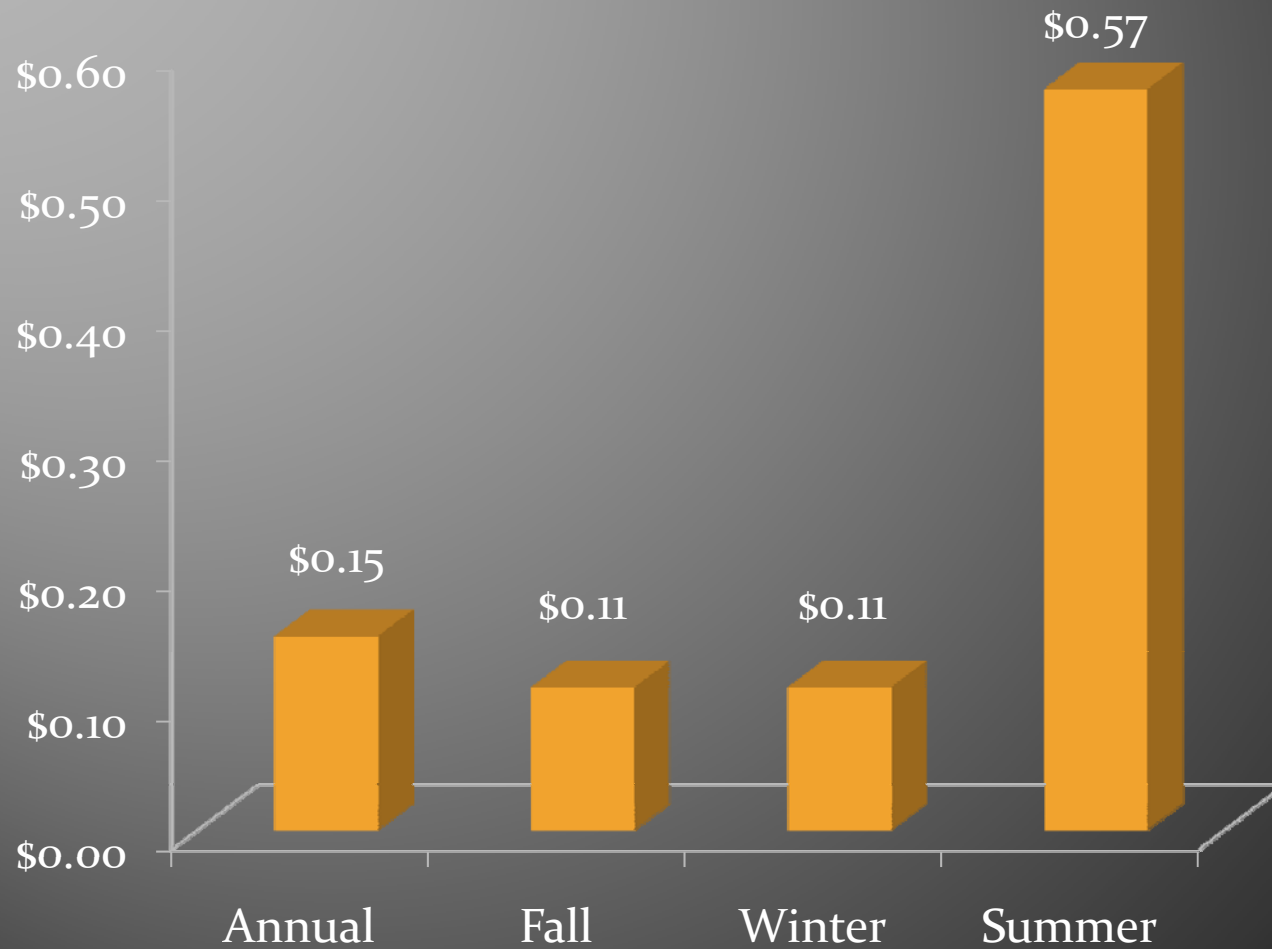
- 8 BUILDINGS SUBMITTED FOR APPROVAL INTO COP PROGRAM
- 70% OF CAMPUS BUILDING SPACE IN COP PROGRAM

ENERGY REDUCTION THROUGH BEHAVIOURAL CHANGES

- ❑ ENERGY MANAGER INVOLVED WITH ANY ENERGY RELATED EQUIPMENT PURCHASES AND INSTALLATIONS (FACILITIES)
- ❑ PROCUREMENT (ALL ENERGY RELATED PURCHASES, MAINTANENCE EQUIPMENT, OFFICE EQUIPMENT, WINDOWS)- STUDY TO DETERMINE SAVINGS POTENTIAL
- ❑ INSTITUTIONAL PLANNING AND ANALYSIS (IPA)- SCHEDULING
- ❑ FACULTY /STAFF AWARENESS AND ENGAGEMENT

STUDENT ENERGY METRIC

ELECTRICAL COSTS PER STUDENT HOUR 2009



Director Sustainability and Environment,

Report to the EAC

June-August, 2010

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Completed
Greenhouse Gas Emissions Reduction report;

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Initiated
Investigations into grants and awards available to TRU regarding emissions reduction and environmental education—ongoing; Bronwen Scott working to assist researchers

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Enrolled
As charter member in Sustainability, Tracking, Assessment & Rating System (STARS), administered by the Association for the Advancement of Sustainability in Higher Education (AASHE);

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Explored
Hawaii; Capt Charles Moore has two properties on the Big Island of Hawaii and has approached TRU to develop sustainability project for the properties which would be useful to the students of TRU and also be examples of sustainable property development and management. Harold Richins, Jon Van Hamme, Dale Parkes and two other faculty and myself made a field trip to look at the feasibility of Captain Moore's proposal

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Completed
Campus energy study; approval in principle granted for \$1.2 million retrofit; tender for design phase advertised; submitted five energy projects to Public Sector Energy Conservation Agreement (PSECA) for three solar hot water heaters for Culinary Arts, Old Main and CAC; partial funding received from EnerCan for previous three projects; submitted requests for funding for solar air projects for Science building;

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Created
environmental education posters and handouts regarding greenhouse gas emissions reduction, environmental sustainability, campus recycling, campus water-bottle refill stations, environmental statistics;

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Created
copy for student handbook re: water bottle refill stations and recycling bins;

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Engaged
singer for TRU 40th Anniversary celebration and presented information at a booth at welcome-back BBQ;

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Presented
2nd Annual Green Golf tournament; 67 attendees; green costume awards presented; special thanks to Ancillary Services and TRU Bookstore for prizes;

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Transportation
demand management study tendered; seven proposals received; winning company to be announced in the 2nd half of September;