
TO: CITY MANAGER **DATE:** 2011 November 2
FROM: DIRECTOR PLANNING AND BUILDING **FILE:** 76500 20
Ref: CEEP
SUBJECT: BURNABY COMMUNITY ENERGY AND EMISSIONS PLAN (CEEP)
PURPOSE: To seek Council funding approval for the *Burnaby Community Energy and Emissions Plan (CEEP)*.

RECOMMENDATIONS:

1. **THAT** Council approve the expenditure from Gaming Funds of \$180,320 (inclusive of 12% HST) for the *Burnaby Community Energy and Emissions Plan (CEEP)*.
2. **THAT** Council authorize staff to enter into a partnership funding agreement with BC Hydro for an estimated \$60,000 contribution toward the completion of the *Burnaby Community Energy and Emissions Plan (CEEP)* to thereby reduce the city's net project cost to a maximum of \$120,320.
3. **THAT** a copy of this report be sent to the Finance and Civic Development Committee, and the Environment Committee for their information.

REPORT**1.0 INTRODUCTION**

In order to meet the requirements of provincial *Local Government (Green Communities) Statutes Amendment Act, 2008 (Bill 27)*, Council adopted a report on 2010 May 3 that established an 'interim' community greenhouse gas reduction (GHG) target of five percent (5%) below 2007 levels, with the provision that more detailed and likely farther reaching targets will be developed through a GHG reduction strategy.

At the time the interim community GHG reduction target was adopted, Council also authorized staff to undertake the next phase of a *Community Greenhouse Gas Reduction Strategy* for the City of Burnaby. Updated targets, policies and actions were then anticipated to be incorporated into a subsequent OCP amendment, once the city has completed a *Community Greenhouse Gas Reduction Strategy*.

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The purpose of this report is to seek Council funding approval for the *Burnaby Community Energy and Emissions Plan (CEEP)*, and to seek Council authorization for staff to enter into a partnership funding agreement with BC Hydro for the CEEP.

2.0 BACKGROUND

2.1 Peak Oil

On 2006 January 16, Council received a report detailing the critical problem of ‘peak oil’ and the anticipated large increases in the price of oil that will occur as a result.

With increasing world oil prices, climate change and air pollution concerns, there is a need for measures to increase resilience of the city, for example, by reducing energy consumption and carbon emissions, increasing production of local renewable energy, and enabling a shift to a low carbon economy.

2.2 Mexico City Climate Conference (2010)

In December 2010, the Mayor attended the Mexico City Climate Conference where the *Mexico City Pact* was signed. Given that the proposed *Mexico City Pact* would commit all signatories to undertake their specified climate actions for the Carbon Cities Registry, Council decided to reserve consideration of a commitment to the Mexico City Pact, pending completion of the city’s *Community Greenhouse Gas Reduction Strategy*.

2.3 Related Strategic Planning Initiatives

As described in the overview report (1 of 4) included elsewhere in this Council agenda, the City is preparing to launch the Environmental Sustainability Strategy (ESS), providing an opportunity to link the CEEP to broader sustainability initiatives. The CEEP would also tie into social and economic priorities identified in the recent Economic Development Strategy (adopted in 2007), and the Social Sustainability Strategy (adopted in 2011). Furthermore, the CEEP would help to inform the Official Community Plan update and anticipated Transportation Plan update. Sustainable energy planning and emissions reduction of GHG and air pollutants are important themes in many of these strategic initiatives.

3.0 CITY ACTION TO DATE

Over the past number of years, the city has undertaken a range of GHG emissions reductions initiatives, at both a corporate and community level.

3.1 Progressive Corporate Action

The city already has a progressive corporate energy plan, has hired an Energy Manager, and has shown success in a number of areas, such as energy savings through building

retrofits and IT services. With this leadership well established with the city's corporate operations, it is logical to move to the next step with a CEEP.

3.2 Interim GHG Target

In responding to the specific requirements of the provincial *Local Government (Green Communities) Statutes Amendment Act, 2008 (Bill 27)*, it is noted that the *Local Government Act (LGA)* required all municipalities in BC to include within their Official Community Plan, by May 31, 2010, targets for the reduction of greenhouse gas emissions and policies and actions with respect to achieving those targets.

In considering the technical, staff resources and time challenges remaining to meet the requirements of the legislation, Council adopted an interim GHG emissions reduction target of five percent (5%) below 2007 level that is currently within the ability of the city to meet through its existing sustainability initiatives.

3.3 Future Work – A Community Greenhouse Gas Reduction Strategy

The interim target was recommended with the understanding that updated targets, policies and actions for GHG emission reductions would be established for incorporation into a subsequent OCP amendment, once the city has completed a *Community Greenhouse Gas Reduction Strategy*. Completion of the strategy was anticipated to help the city understand the implications of various future land use, transportation, building, energy supply and waste management scenarios, and approaches on GHG emissions and energy use in Burnaby, and identify supportable and appropriate targets, policies and actions for reducing GHG emissions.

3.3.1 A Three Phased Approach

The Council report, adopted on 2010 May 3, proposed the following three phases of work for the development of a *Community Greenhouse Gas Reduction Strategy*.

i. Phase One: Community GHG Inventory and Forecast

Building on existing information, this phase would establish the base context for strategies and actions by totaling and categorizing the city's community-wide energy and GHG emissions profile and forecast.

It would analyze a range of technical information related to the community, including existing land use and transportation patterns, solid waste, and buildings; and consider the quantitative effects of existing policies set out in the Official Community Plan and other policy documents. This analysis would provide the framework for considering the various opportunities and strategies in addressing energy and emission reductions in Burnaby.

Once the base Community GHG Inventory is complete, this Phase would also include the development of a “business as usual” forecast of GHG emissions for the City of Burnaby looking forward to the years 2020 (10 year) and 2050 (40 year).

ii. Phase Two: Exploring Multiple GHG Emissions Reduction Scenarios

The second phase of the strategy development would assess the potential implications of high-level changes in policy and practice, as related to alternative GHG reduction target scenarios. It would include consideration and analysis of various opportunities and their associated policies, targets and actions, as well as an assessment of their implications. The emission reduction potential of the different scenarios would be quantified to assist the city in establishing updated reduction targets.

In order to develop appropriate GHG reduction targets, an analysis of future emissions would be undertaken that considers future population and economic growth rates, projected land use patterns, the implications of projected transportation improvements, changes to total transportation movements and mode split rates, the rate of building energy efficiency retrofits, district energy opportunities, likely provincial effects on building codes, and improved fuel efficiency standards. This range of factors would be varied to develop different hypothetical scenarios to help quantify the effects and implications of various emissions reduction measures that the city could consider.

This phase would help steer the city towards a preferred direction for more detailed development. This Phase would also include the quantification of the impact of ongoing policies and practices on GHG emissions, as well as any new proposals. Definition of a management framework would be proposed to best integrate energy and GHG management responsibilities within the existing organizational structure, and include Key Performance Indicators (KPIs) and data collection and reporting systems to input, track and report progress on GHG targets and objectives.

iii. Phase Three: Developing the Preferred Approach

This phase would articulate the city’s energy and emission reduction approach, providing specific policies and actions detailed by sector (land use, buildings, transportation, and solid waste). Phase Three would become the basis for the Burnaby’s *Community Green House Gas Reduction Strategy* and would present the recommended GHG emission reduction target for the city, as well as the specific associated strategies, policies, and actions.

A finalized report would serve as the foundation for the city's *Community Greenhouse Gas Reduction Strategy* that will describe in detail how Burnaby will reduce its GHG emissions. By analyzing current and forecasted GHG emissions within the city, the report will outline the contribution that various sectors (transportation, buildings, and solid waste) make to the total community emissions. It will also indicate how various factors such as urban form, density and transit, influence GHG emissions by examining some of the research and precedents, and lay out a number of measures that are available to municipalities to reduce GHG emissions. More specifically, it is to provide an estimate of the contribution of some of the major initiatives to GHG reductions between now and 2050 through a varied "scenarios" approach.

Finally, the report would establish the basis for Burnaby objectives and targets for reducing community GHG emissions. One of the primary objectives of the study is to determine achievable targets for the City of Burnaby for emission reductions that can be incorporated into a future OCP amendment, as required by the Local Government Act.

This approach was suggested in an effort to:

- seek an outcome that would be simple and easy to understand;
- avoid the challenges of complex reporting requirements;
- avoid the need for excessive monitoring;
- minimize the need for additional staff resources; and
- ensure the effort is economically, socially and environmentally viable.

To assist the City of Burnaby in preparing this work, the previous report to Council recommended that staff retain an outside consultant with the necessary specialized expertise in this field to complete the project. It was also stated that the project would be organized around the three phase approach outlined above.

4.0 CEEP

The CEEP is being proposed to address not only potential regulatory GHG reduction requirements, but also integrate community social and economic values, and better inform the development of the ESS and pending update of the Burnaby OCP. As a result, the CEEP would present a high level, comprehensive long term (25 year)¹

¹ Although the three phase approach contained in the 2010 May 3 Council report includes 10 year and a 40 year GHG forecasts, these can likely be addressed in addition to the 25 horizon required by the BC Hydro. Subject to Council approval of this report, these and other project plan details will be reviewed and coordinated by city staff, in association with BC Hydro staff, as part of drafting the Request for Proposal (RFP) for the CEEP project.

framework to achieve breakthrough reductions in the use of energy and to reduce greenhouse gas emissions within the City of Burnaby.

The CEEP would support multiple community objectives, including: reducing GHG emissions, increasing energy efficiency, increasing community energy resilience, enhancing overall sustainability, reducing lifecycle costs, and creating local economic development opportunities.

4.1 Process and Project Governance

Similar to the ESS, the CEEP is also being proposed to use a ‘community dialogue’ approach.

The CEEP would also use a Steering Committee. However, in contrast to the ESS, the Steering Committee for the CEEP would likely be more technically based, would be more energy and emissions sector focused, and would have a mix of internal (cross-departmental) and external (other agency) stakeholders. It is proposed that the Steering Committee for the CEEP would be chaired by a city staff person.

As with the ESS, the CEEP would also use an Internal Project Coordinating Committee (comprised of staff from the various city departments including, Planning and Building, Engineering, Parks, Recreation and Cultural Services, Purchasing) and the Steering Committee for the CEEP. The same Internal Project Coordination Committee may be able to serve both the ESS and the CEEP.

Public engagement for the project could likely take advantage of public outreach being planned for the ESS process, potentially including one or more open house events, and various forums for providing input and feedback.

4.2 Major Activities

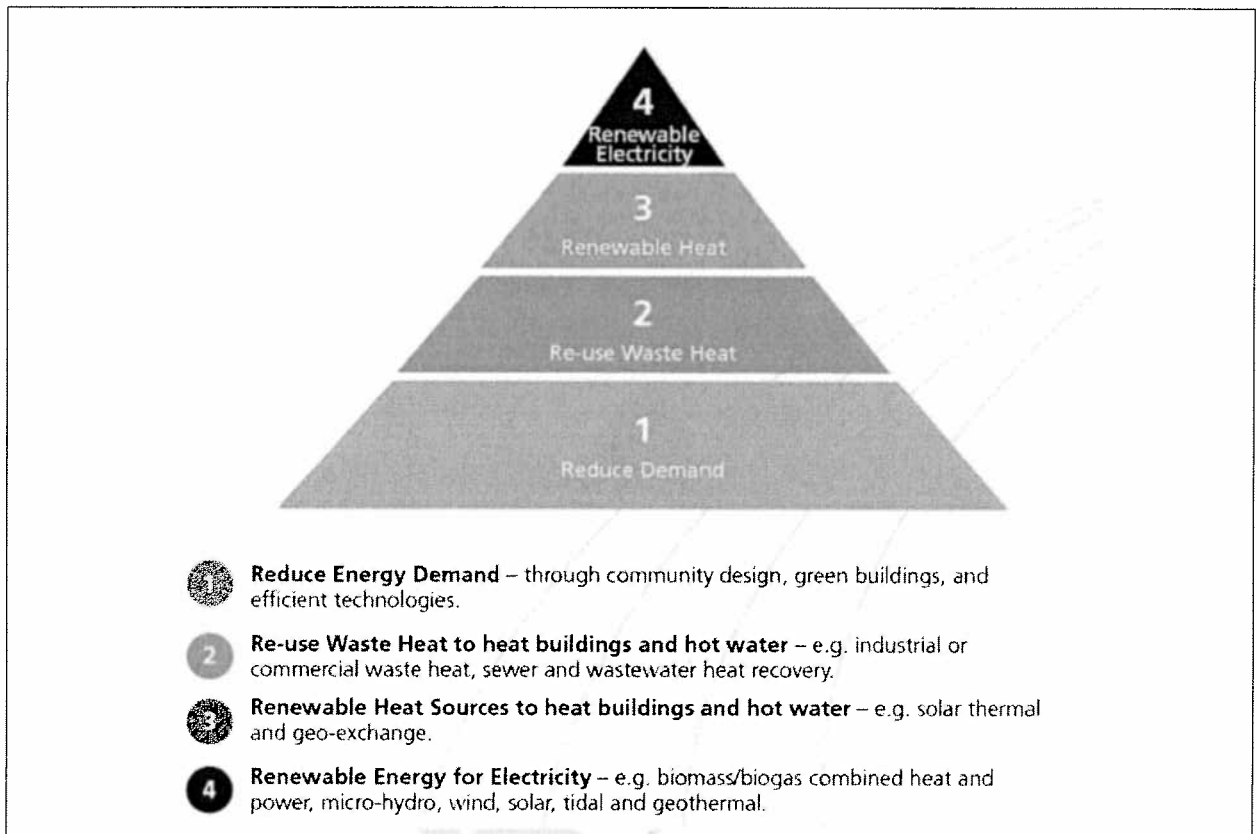
Under the terms of BC Hydro’s *Sustainable Communities Program*, BC Hydro is interested in supporting communities in the development of CEEP’s that acknowledge electricity conservation and supply opportunities to assist their efforts in reducing overall energy demand, compared to business as usual projections.

BC Hydro’s minimum program requirements for CEEP partnership include:

- Sector-based summary of current electrical consumption;
- Business as usual analysis by sector of expected electrical consumption for 10 and 25 year horizons;
- Vision, goals and targets for energy demand and supply and community scale energy mapping;

- List of strategies to meet vision/goals/targets, based on, in order of priority: reducing consumption; re-use of waste heat; renewable heat (district energy); renewable electricity supply - as shown in **Figure 1** (below).
- Evaluation of strategies, including for electrical savings;
- Graphical representation of final planned strategies; and
- Prioritized implementation plan.

Figure 1
BC Hydro's Community Energy Planning Hierarchy



In addition to these requirements, the CEEP is expected to:

- Integrate GHG emissions into each component, including vision, goals, targets and strategies for reduction;
- Provide a City-wide scan of opportunities for Integrated Resource Management approaches² as a strategy to meet the CEEP's vision/goals/targets and other priorities as identified by the ESS.

² Ministry of Community Development, 2008: Resources From Waste; Integrated Resource Management Study Phase 1 Report. http://www.cscd.gov.bc.ca/ministry/docs/IRM_report.pdf

- Provide recommendations for outreach and education to support the CEEP, for the public, businesses and developers.

5.0 FINANCE

The Council report, adopted on 2010 May 3, recommended that the necessary funds for what was originally envisioned as a *Community Greenhouse Gas Reduction Strategy* were to be allocated from the city’s Gaming Fund Reserves, given the project’s relationship to environmental protection. The 2010 May 3 Council report noted that approval for expenditure of funds on the *Community Greenhouse Gas Reduction Strategy* project would be the subject of a subsequent report to Council. Staff also made the commitment that they would advise on the availability of any senior government funding to off-set the costs of the proposed work.

As introduced in the related overview Council report (1 of 4) appearing elsewhere on the Council agenda, staff have identified that BC Hydro’s *Sustainable Communities Program* provides for a significant partnership funding opportunity. Under the terms of this program, BC Hydro would provide expertise and funding to assist the city to develop a strategy, policies and actions that would eventually be incorporated into Burnaby’s updated OCP. As shown in **Figure 2** (below), given the City of Burnaby’s population, BC Hydro would provide 50% funding up to a maximum of \$60,000 in funding toward the cost of producing the CEEP.

Figure 2
BC Hydro Partnership Funding Opportunity - CEEP
(including HST and contingency)

| | CEEP Estimated Cost | Source of Funding |
|----------------------------|---------------------------|----------------------------|
| CEEP | \$140,000 | |
| Contingency (@15%) | \$21,000 | |
| SUB-TOTAL | \$161,000 | |
| 12% HST | \$19,320 | |
| TOTAL PROJECT COST | \$180,320 | |
| Less BC Hydro Contribution | (\$60,000) | BC Hydro |
| NET PROJECT COST | \$120,320 | Gaming Fund Reserve |

It should be noted that the terms of BC Hydro’s financing agreement would see their portion of the payment held back until the completion of the assignment to their satisfaction, and then the payment would flow through the city to the consultant. Therefore, staff are seeking authorization for the total project cost of \$180,320 (including 15% contingency and 12% HST). Once the partnership funding payment of up to

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\$60,000 is received from BC Hydro, the city's estimated maximum net cost would be \$120,320.

City staff and BC Hydro staff have had several meetings to discuss the potential benefits of the partnership arrangement in completing the CEEP, and these meetings have resulted in BC Hydro issuing the letter of support that is included as *Attachment A*.

Staff are also aware of several senior government funding opportunities, including the Federation of Canadian Municipalities, *Green Municipal Grant Fund* program.³ This particular program offers 50% funding to a maximum of \$350,000, but requires that the resulting plans must include both a vision and targets (which the CEEP would). Although applications can be received throughout the year, the review of applications can take up from six to nine months to review.

Staff intend to make application(s) for additional partnership funding to senior government. Should the application(s) be successful, these funds would reimburse the Gaming Fund Reserve accordingly.

6.0 CONCLUSION

On 2010 May 3, Council adopted a report which established an 'interim' community greenhouse gas reduction target of five percent (5%) below 2007 levels, with the provision that more detailed targets will be developed through a GHG reduction strategy.

At the time the interim community GHG reduction target was adopted, Council also authorized staff to undertake the next phase of a *Community Greenhouse Gas Reduction Strategy* for the City of Burnaby.

To further this initiative, staff have investigated partnership funding opportunities and have found that the objectives and activities originally proposed in the previous Council report for the three phase project approach for the *Community Greenhouse Gas Reduction Strategy* and the terms of BC Hydro's *Community Energy and Emissions Plan* requirements are both compatible and complementary.

The CEEP is being proposed to address not only the regulatory GHG reduction requirements, but also integrate community social and economic values, and better inform the development of the ESS and pending update of the Burnaby OCP. The CEEP would support multiple community objectives, including: reducing GHG emissions, increasing energy efficiency, increasing community resilience, enhancing overall sustainability, reducing lifecycle costs, and creating local economic development opportunities. In this way the CEEP would better address the issues of GHG reductions,


³ FCM's *Green Municipal Grant Fund* program was established to encourage communities to become more sustainable and support them in planning and implementing actions that contribute to their long-term well-being.

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energy, and costs in an integrated manner. The outcomes of the CEEP are expected to be viable, sensible, and implementable. The outcomes will also be expected to contribute to and enhance the triple bottom line - economic, social, and environmental. The objective of the CEEP will be to maximize the benefits (community and corporate) while minimizing the impacts (community and corporate).

Subject to Council adoption of this report, the next steps would be for staff to enter into a partnership agreement with BC Hydro, engage the services of a consultant for the CEEP (in accordance with BC Hydro's requirements), assemble the Project Steering Committee for the CEEP, and assemble the Internal Project Coordination Committee.

Staff are therefore recommending that: Council approve the expenditure from Gaming Funds of \$180,320 (inclusive of 12% HST) for the Burnaby Community Energy and Emissions Plan (CEEP); that Council authorize staff to enter into a partnership funding agreement for an estimated \$60,000 toward the completion of the Burnaby Community Energy and Emissions Plan (CEEP) to thereby reduce the city's net project cost to a maximum of \$120,320; and that a copy of this report be sent to the Finance and Civic Development Committee, and the Environment Committee.


B. Luksun, Director
PLANNING AND BUILDING

Attachment

DAC/LT:jc

cc: Deputy City Managers
Director Engineering
Director Finance
Director Parks, Recreation and Cultural Services
OIC – RCMP
Fire Chief
Chief Librarian
City Clerk
City Solicitor



Eddie Young
BC Hydro, Power Smart
Program Manager – Community Marketing
900-4555 Kingsway
Burnaby, BC V5H 4T8

May 16, 2011

Mayor Derek Corrigan
City of Burnaby
4949 Canada Way
Burnaby, BC V5G 1M2

Dear Mayor Corrigan

Re: City of Burnaby Community Energy and Emissions Plan

Demand-side management is a critical part of BC Hydro's strategy to address the gap between electricity supply and demand in British Columbia as well as to reduce energy costs and environmental impact. It is felt that energy efficient design, construction and operation of Sustainable Communities through community energy planning represents opportunity for energy and capacity savings.

In the fall of 2009, BC Hydro Power Smart developed a Sustainable Communities program with the intent of exploring and advancing energy and capacity savings opportunities with B.C. communities and Power Smart is interested in supporting the development of a Community Energy and Emissions Plan (CEEP) in Burnaby through this program.

This offer includes matching funding up to \$60,000 for the development of a CEEP, technical review of the plan by BC Hydro staff as well as expert consultation from BC Hydro staff throughout the development of the CEEP.

BC Hydro staff have been providing input to City of Burnaby staff as they develop their workplan and have been advising them of how best to access our Sustainable Communities Program funding. Based on our work to date, I am confident that the City of Burnaby's CEEP will meet our program requirements and be eligible for funding as described above. Power Smart is excited by the opportunity to be a part of the City of Burnaby's efforts to continue to build an energy-efficient, sustainable community.

Best Regards,

A handwritten signature in black ink, appearing to read 'Eddie Young', with a long horizontal stroke extending to the right.

Eddie Young