
TO: CITY MANAGER **DATE:** 2011 November 1

FROM: DIRECTOR PLANNING AND BUILDING **FILE:** 76500 20
Ref: ESS

**SUBJECT: BURNABY ENVIRONMENTAL SUSTAINABILITY STRATEGY (ESS);
BURNABY COMMUNITY ENERGY AND EMISSIONS PLAN (CEEP);
AND METROTOWN DISTRICT ENERGY (PRE-FEASIBILITY) STUDY
(MDES)**

PURPOSE: To provide Council with an overview of three related initiatives – the Burnaby Environmental Sustainability Strategy (ESS); the Burnaby Community Emissions and Energy Plan (CEEP); and the Metrotown District Energy (Pre-Feasibility) Study (MDES).

RECOMMENDATIONS:

1. **THAT** Council receive this report for information.
2. **THAT** a copy of this report be sent to the Community Development Committee, the Environment Committee, the Finance and Civic Development Committee, and the Parks, Recreation and Culture Commission for their information.

REPORT**1.0 INTRODUCTION**

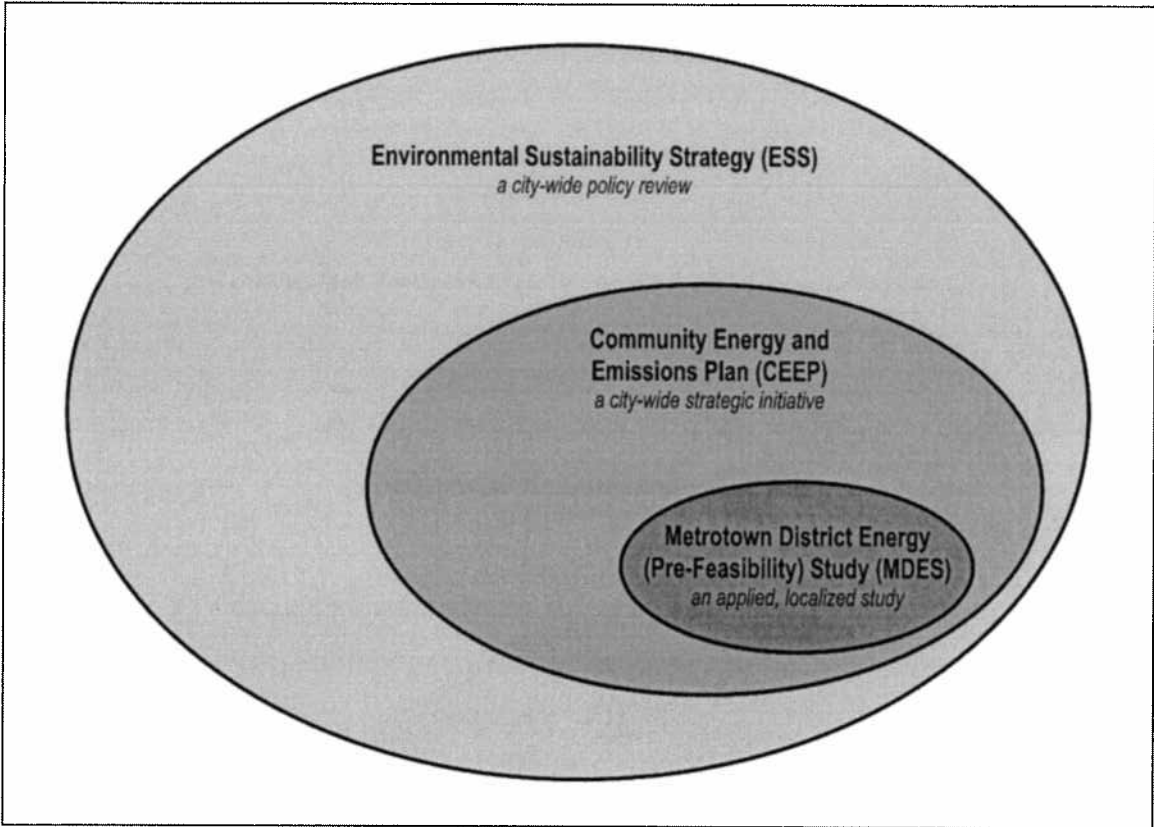
The city has been recognized for being an environmental leader. The family of initiatives presented in this report will ensure that the city remains so. The city has a unique opportunity to advance three inter-related initiatives that would in total offer the city efficiencies and benefits that could not be realized if they were to be advanced separately. The three initiatives include:

- the pending Environmental Sustainability Strategy (ESS);
- a Community Energy and Emissions Plan (CEEP); and
- a Metrotown District Energy (Pre-Feasibility) Study (MDES).

By linking all three – a city-wide policy review (the ESS); a city-wide strategic initiative (the CEEP), with an applied, localized study (the MDES) – the resulting synergy is expected to provide a well grounded approach that excites and engages the ESS Steering Committee, the public, and the development community.

As shown in **Figure 1** (below), the MDES is conceptually nested within the CEEP and the CEEP, in turn, is conceptually nested within the ESS. **Figure 1** is intended to show the direct relationship between these three initiatives – the MDES will inform the CEEP, and the CEEP will inform the ESS.

Figure 1
Conceptual Relationship Between The Three Initiatives



Starting with the broadest initiative, the ESS is anticipated to be a high level city-wide policy document that will be comprehensive in scope (covering the entire array of environmental areas) and will lay out potential environmental plans, programs, and actions to be considered by the city.

The CEEP would also be a city-wide strategic initiative, but is intended to be narrower in scope focused on energy and emissions.

The MDES would be an applied, localized study focusing on one Town Centre within the city and the specific opportunities for district energy which exist at that location.

The purpose of this report is to provide Council with an overview of three related potential initiatives. It should be noted that each of these three projects is the subject of a separate and more detailed Council report appearing elsewhere on this Council agenda.

2.0 BURNABY ENVIRONMENTAL SUSTAINABILITY STRATEGY (ESS)

Following the successful release of the Social Sustainability Strategy (SSS) and the award-winning Economic Development Strategy (EDS), the city will be starting the process to develop the Environmental Sustainability Strategy (ESS) – the third (and final) in the trilogy of Economic, Social and Environmental sustainability strategies.

These three strategies are not stand alone documents. They all need to have a strong relationship to the Burnaby Official Community Plan (OCP) as an expression of the community’s economic, social and environmental aspirations. The city intends to use the strategies to inform the process of updating its OCP in relation to submission of a Regional Context Statement (RCS) update given the final adoption of the Regional Growth Strategy (RGS) by the Metro Vancouver Board of Directors on 2011 July 29.

The vision, policies and action plan cast by the ESS will set new directions for the future that complement and support the EDS and the SSS, and will respect the realities of the city’s financial limitations and mandate. The primary purpose of these strategies is to set out actions that can make a difference. As with the EDS and the SSS, some of the actions that will be proposed by the ESS will be very specific and may likely be readily implemented; while others may seem at first to be less defined, calling for more thinking or collaboration en route to developing more specific plans. This is because these strategies do not purport to have all the answers. In many cases the strategy simply identifies areas of promise that are worth exploring further.

Similar to the first two, the process being proposed for the ESS will be to use a blue ribbon Steering Committee to engage the community and a ‘community dialogue’ approach to provide the broadest possible opportunity for community input into the development of the ESS.

As with the first two, Mayor Corrigan will be chairing the ESS Steering Committee with membership representing a cross section of environmental subject areas and broad community interests to ensure that the resulting ESS is both innovative and pragmatic, and will build on our current environmental achievements and assets.

With the recent adoption of the SSS, subject to Council approval, we will now see momentum build around the ESS as we confirm the process, assemble the Steering Committee, take stock of where we are, and engage the broader community in setting guiding principles, subject areas, and themes for the ESS.

As shown in **Figure 2** (next page), the possible topics to be discussed during the ESS process will be broad and will likely include both ecological protection and sustainability of the built environment across the city. The selection and grouping of topics into subject areas and subsequent sub-committee workshops will be developed through dialogue with the ESS Steering Committee.

Figure 2
Possible Topics for the ESS

- Air quality
- Biodiversity
- Climate change mitigation/adaptation
- Composting
- Corporate Energy Planning
- District energy (renewable heat)
- Drinking water
- Energy conservation (reduce consumption)
- Energy re-use (waste-to-energy)
- Environmental education
- Environmental partnerships
- Environmental stewardship (local and global)
- Environmentally sensitive areas (ESA's)
- Green buildings
- Green economy (business attraction and retention)
- Green infrastructure
- Green urban design
- Habitat management
- Human health
- Integrated pest management
- Interagency coordination
- Parks and open space
- Parks planning and management
- Public involvement
- Recycling
- Reducing emissions (green house gases)
- Regional responsibility
- Renewable energy (solar, wind, other)
- Resource management (liquid and solid)
- Risk management
- Stream protection
- Sustainable business (triple bottom line)
- Transportation demand management
- Transportation supply (choices)
- Urban agriculture
- Urban land use planning (density/zoning)
- Waste reduction (liquid and solid)
- Water conservation and re-use
- Water quality (receiving waters)
- Watershed management

The process to develop the ESS is described in a separate and more detailed Council report (2 of 4) appearing elsewhere on this Council agenda.

Regardless of how the subject areas and themes are organized, energy is likely to be a central issue. It is also a highly technical field, and viable strategies to reduce demand, re-use waste energy, produce renewable heat, produce renewable energy, and reduce carbon emissions will need to be well informed with appropriate expertise. The proposed CEEP, described below, is intended to address this need.

3.0 COMMUNITY ENERGY AND EMISSIONS PLAN (CEEP)

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 target of five percent (5%) below 2007 levels, with the provision that more detailed greenhouse gas (GHG) reduction strategy would be prepared to address more specific aspects.

At the time the interim GHG 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 would be incorporated into a subsequent OCP amendment, once the city has completed a *Community Greenhouse Gas Reduction Strategy*.

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 the pending update of the Burnaby OCP. As a result, the CEEP would present a comprehensive long term (25 year) framework to achieve breakthrough reductions in the use of energy and to reduce greenhouse gas emissions within the City of Burnaby.

Similar to the ESS, the CEEP is also being proposed to use a ‘community dialogue’ approach, and would also use a Steering Committee. However, in this case the proposed staff Steering Committee would likely be more energy and emissions sector focused.

The CEEP is the subject of a separate and more detailed Council report (3 of 4) appearing elsewhere on this Council agenda.

4.0 METROTOWN DISTRICT ENERGY (PRE-FEASIBILITY) STUDY (MDES)

The MDES is intended to be a pre-feasibility study to assess the potential opportunity - the feasibility and advisability of using district energy system(s) to serve as the heat supply and/or hot water supply for parts or all of the Metrotown Town Centre. This area is being proposed due to the range of existing development types and anticipated new development in line with the city’s established plans to accommodate higher density residential and commercial growth in this and other town centres. District energy systems entail localized energy sharing and production at scales ranging from a large building to a neighbourhood, that offer opportunities for improved efficiency, sustainability and community value.

In some respects, key aspects of the MDES would be different than the ESS and the CEEP. The MDES is proposed to be more of an internal learning exercise geared at exploring practical operational issues. As such, the Steering Committee for this project would likely be limited to key city staff and staff representatives of key utilities. Moreover, opportunities for wider community input would also be appropriately scaled.

The MDES would entail exploring a range of possible district energy technologies and ownership models, in order to focus on the best options for the city and the local community. The findings of the MDES would be reported to Council for consideration and direction, as part of a “go / no-go” decision (as shown in **Figure 3** in Section 7 of this report), before undertaking further analysis as part of a feasibility study.

The MDES is the subject of a separate and more detailed Council report (4 of 4) appearing elsewhere on this Council agenda.

5.0 COST SAVING/TIMING OPPORTUNITIES

The city has committed a significant amount of staff resources and operating funding to undertake the ESS. Moreover, there are several opportunities available to coordinate and leverage the Steering Committee, sub-committee workshops, Internal Project Coordination Committee, and public outreach activities all planned for the ESS Project with those required for the CEEP and MDES. By advancing all three projects in parallel, significant advantages in cost savings and timing opportunities could be potentially realized by coordinating these activities.

City staff are cognisant of the collective cost of the three proposed initiatives and as a result have investigated cost sharing opportunities.

6.0 PARTNERSHIP FUNDING OPPORTUNITIES

The City of Burnaby is already taking advantage of 50% partnership funding from BC Hydro to help cover the costs of the recently created Energy Coordinator position within Engineering Facilities Management. The focus of this position is corporate energy management.

City staff have recently reviewed the six other BC Hydro partnership funding opportunities within their *Sustainable Communities Program*, and have identified the following as an excellent fit with the major energy-related areas of interest described above. In particular, the two programs described below are of interest.

6.1 Community Energy and Emissions Plans (CEEP)

Given the City of Burnaby’s population, BC Hydro would provide up to \$60,000 of funding for up to 50% of the cost of producing the CEEP. According to BC Hydro staff, CEEP’s typically take about six months to prepare.

6.2 District Energy (DE) Pre-Feasibility Study

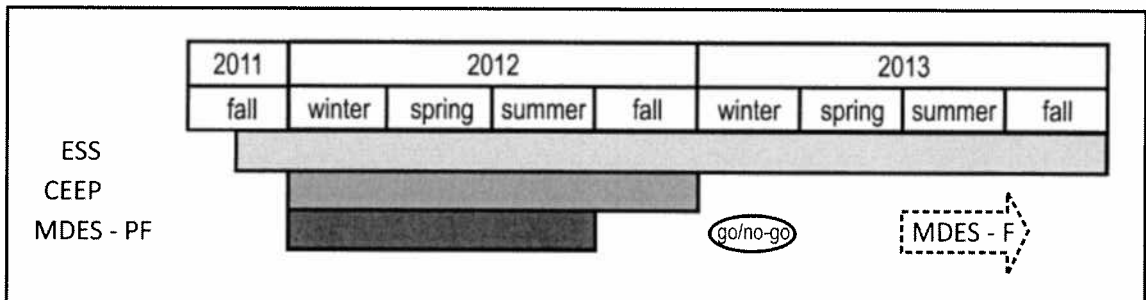
City staff, in association with staff from BC Hydro, have identified Metrotown as a strong candidate area with significant potential for one or more district energy systems, as a result of the large amount of future density anticipated in the area.

Given the large size of the Metrotown area (about 735 acres) combined with the anticipated high level of potential district energy benefits in the Metrotown area, BC Hydro has increased the maximum eligible amount for the MDES from \$20,000 to \$50,000. This would result in an estimated \$34,500¹ for 50% of the estimated maximum cost of the MDES.

7.0 TIMING

Figure 3 (below) shows the overall sequence of the three related initiatives. The ESS is anticipated to take about 24 months to complete, while the CEEP and the MDES are anticipated to take about 12 months and about 9 months respectively. It should be noted that some allowance has been made to provide for and take advantage of interaction between these three related initiatives.

Figure 3
Overview Schedule for the Three Initiatives



8.0 POTENTIAL BENEFITS

As shown in **Figure 4** (next page), the main reason for undertaking these three initiatives in parallel is to allow the MDES to inform the CEEP, and to allow the CEEP to inform the ESS.

The following benefits could potentially be realized by advancing all three of these initiatives in parallel.

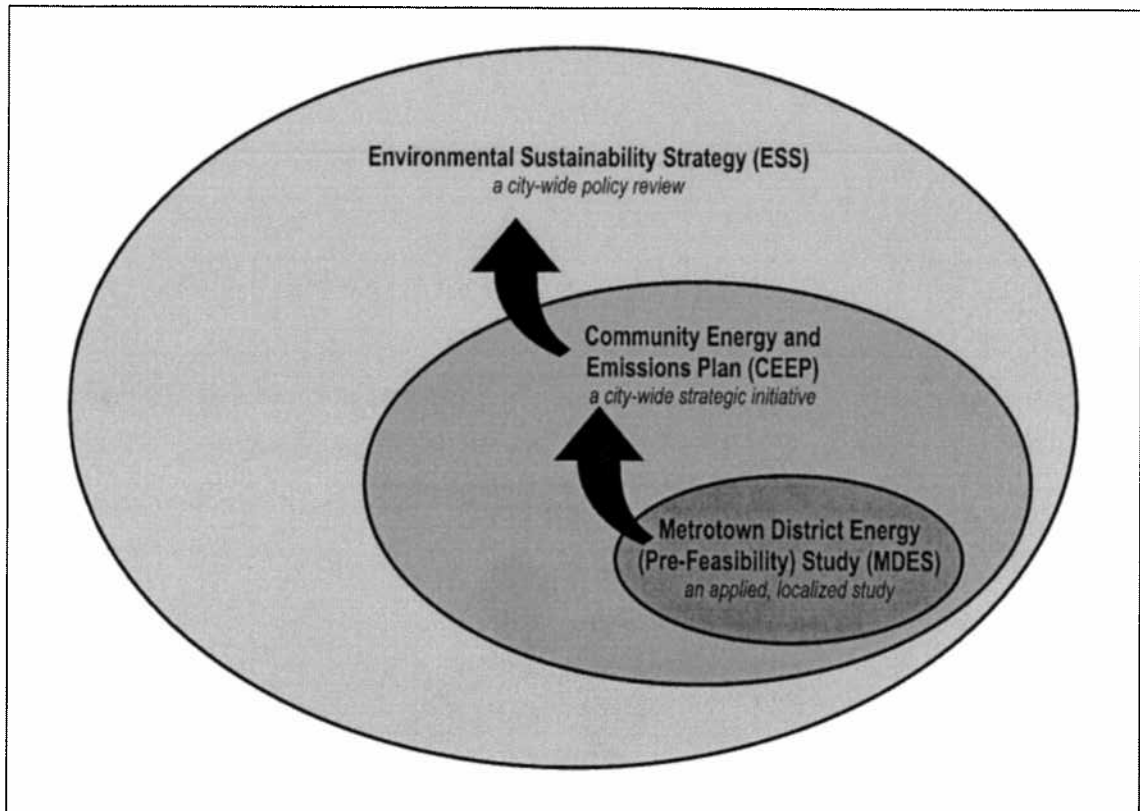
Overall General Benefits

- Link all three to gain synergy and provide a well grounded approach.

¹ Based on a contract extension of up to a maximum of \$50,000.

- Integrate analysis and planning (policy and capital investments) around energy, emissions, and financial benefits.
- Identify opportunities earlier in the process.
- Engage a broader array of stakeholders, while all processes are active.

Figure 4
MDES Informs the CEEP and the CEEP Informs the ESS



ESS Related Benefits

- The ESS would be better informed by the analysis and planning to be undertaken as part of the CEEP and the MDES.
- The ESS could take advantage of strategic and tactical thinkers that are participating in the Steering Committees for the CEEP and the MDES.
- The CEEP and the MDES would provide real examples as opportunities to ground the policy directions suggested in the ESS.
- The City would demonstrate commitment to the vision and direction of the ESS through early action.

CEEP Related Benefits

- The CEEP could take advantage of public consultation opportunities provided for within the ESS 'community dialogue' approach.
- The CEEP could take advantage of high level strategic input from the blue ribbon Steering Committee assembled for the ESS.
- Better utilize and leverage the significant community energy assets present in the City of Burnaby (e.g., sources of waste heat, etc.).
- Help the city meet and exceed its statutory requirement as defined by the provincial government's *Local Government (Green Communities) Statutes Amendment Act, 2008 (Bill 27)*, to develop a strategy to reduce greenhouse gas (GHG) emissions with defined targets and actions.
- Deliver a much broader set of priorities and actions with significant value to the city beyond meeting minimum legislative requirements (e.g., to explore potential opportunities for innovative and sustainable community development and revenue streams for the city, that would support and be integrated with the ESS).
- Provide broad input to the pending Burnaby OCP update, related to the adoption of Metro Vancouver's Regional Growth Strategy.
- Provide broad input into the pending Burnaby Transportation Plan update.
- Initiate high-level bi-lateral dialogue with utilities on their future capital plans and programs which may result in integrated utility planning (greater overall coordination of efforts: managing overall demand in the future and overall efficiencies in pending projects – new and renewal).
- Build on experience of other communities and consultants who have already undertaken CEEP's.
- Take advantage of the technical review function offered by BC Hydro to ensure that the work done by consultants is subjected to a peer review by BC Hydro staff, prior to any decisions being made.
- Take advantage of the partnership funding being offered by BC Hydro.

MDES Related Benefits

- Use an applied study to help catalyze an overall approach in the city, to adopt lower-emissions, lower-demand energy production and management.
- Support the recently adopted 's'-category zoning by establishing a district energy framework to which individual developments could potentially connect. This could enable the use of technology to gain building energy efficiency, which in turn may meet the highest standards for green building performance.
- Take advantage of marketplace interest in district energy.
- Take advantage of positive market conditions.

To: City Manager
From: Director Planning and Building
Re: ESS, CEEP, and MDES (1 of 4)
2011 November 1Page 10

- Take advantage of the technical review function offered by BC Hydro to ensure that the work done by consultants is subjected to a peer review by BC Hydro staff, prior to any decisions being made.
- Take advantage of the partnership funding being offered by BC Hydro.

9.0 CONCLUSION

In order to capitalize on the opportunities and initiatives described above, in a way that supports current city directions and policy and the pending ESS process, the timing is ideal to advance a CEEP, together with the MDES.

Energy and GHG planning by nature cuts across many different aspects of sustainability (air quality, climate change, economic self-reliance, transportation, green buildings, land use, etc.). Furthermore, much of the public engagement around the CEEP would be carried out as a component of the ESS. This would allow for an economical use of the Steering Committee, public engagement resources, and staff time already planned for the ESS process.

Integration of these strategies is expected to offer synergies, such as the incorporation of more defensible and achievable energy targets in the ESS than could be achieved otherwise, and the identification of objectives and actions that achieve multiple benefits for the community.

Therefore, staff are recommending that Council consider advancing the CEEP and MDES concurrently with Burnaby's ESS. As such, staff have advanced the three Council reports, one for each of these three initiatives, for the consideration of Council within this agenda.



B. Luksun, Director
PLANNING AND BUILDING

DAC/LT:jc

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

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