



LETTER NO. L-12-94

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July 20, 1994

Mr. Lloyd Moseley  
City Treasurer  
Corporation of the City of Nelson  
City Hall, 502 Vernon Street  
Nelson, B.C.  
V1L 4E8

Dear Mr. Moseley:

Re: Corporation of the City of Nelson  
Integrated Resource Plan ("IRP")

Thank you for the City of Nelson draft Integrated Resource Plan. Commission staff have reviewed the plan and offer the following comments for your consideration. For convenience, these comments have been organized according to the BCUC IRP Guidelines which were issued in February, 1993.

### Objectives

The Guidelines call for the identification of the objectives of the plan. The City has identified the following objectives with respect to the provision of power.

1. Reduce the dependency on WKP for supply of wholesale power by developing or acquiring additional generation facilities or negotiating preferred supply alternatives which result in lower wholesale power costs.
2. Improve energy efficiency by reducing system losses and enhancing system and customer energy management measures.
3. Adopt long-range capital and maintenance plans which will continue to provide levels of reliability, power quality and safety which are comparable with other electric utilities in western Canada

These objectives focus primarily on financial, energy efficiency and reliability concerns and do not consider environmental or other social concerns as suggested by the BCUC Guidelines. However, the criteria used to evaluate resource options do consider these broader concerns so that the overall tenor of the plan is consistent with the Guidelines. In future drafts, the City may wish to consider identifying environmental and social objectives explicitly.

## **Demand Forecasts**

The Commission's IRP Guidelines call for the need for potential resources to be assessed against several demand forecasts. Further, the Guidelines call for the demand forecasts to be gross, or pre-DSM, and to be constructed in such a way that they are compatible with the end-use categories used in analysis of DSM programs so that the effects of a specific DSM resources can be allocated to specific end-uses in the demand forecast.

The City has presented three demand forecasts. The base case assumes that the recent historical trends, which show energy growth at 2.25% per annum and demand growth at 1.3% per annum, are maintained over the next thirty years. Because the amount of self-generation is fixed, in the absence of alternative resources, this suggests that power purchases from WKP must increase on average by 4.45% and 2.2% per annum for energy and demand respectively. In addition, the City has put forth a minimum growth case, which assumes energy growth at 1.5% per annum and demand growth at 1.0% per annum and a maximum growth case which assumes energy growth at 3.0% per annum and demand growth at 2.0% per annum.

These forecasts are not segmented by end-use or customer class nor is there any indication as to how the parameters which define the low and high cases were chosen. Further, as the City is an active participant in WKP's PowerSmart program, the demand forecasts will reflect DSM efforts to date.

Staff recognize that the City of Nelson Electric System is a relatively small utility and should not be expected to undertake the kind of demand forecasting which would be appropriate for a larger utility. Nonetheless, the City may wish to beef up its forecasting efforts to consider more explicitly factors which will affect demand for electricity within its service area as this may help the assessment of risks associated with particular resource options. In this regard, the City may wish to examine West Kootenay Power Ltd's demand forecasting methodology or consider working directly with West Kootenay to estimate demand within the City's service area.

## **Identification of Supply and Demand Resources** **Characterization of Supply and Demand Resources**

The IRP identifies a number of supply and demand resources. These include further participation in WKP's PowerSmart program, power purchases, cogeneration opportunities, hydro-generation facilities and a natural gas turbine. The list appears to be comprehensive.

Each option has been thoroughly described within the IRP and evaluated against four accounts: financial, environmental, social and energy security. Although these accounts mirror the accounts used by WKP in its IRP, the weights attached to each account are different. The City has given the financial account a 40% weight, the environmental account a 20% weight, the social account a 10% weight and the energy security account a 30% weight.

Commission staff are curious as to how the weights were chosen and what, if any, public participation was sought by the City in determining the weights associated with different accounts. It may be that the City believes that the fact that the electric system is responsible to elected officials means that more particular means of public participation are unnecessary. Although this may be true for urban customers, it is not true for rural customers whom the Commission has a duty to protect. If the Commission were to have concerns about a particular resource option which the City wished to pursue, knowledge of the means used by the City to assess public acceptability, particularly with respect to rural customers, could be helpful.

Two attributes were contained within the financial account: the payback period and the internal rate of return over a 40 year period. These attributes can be measured objectively which is why Commission staff

assumes they were chosen. However, the City may wish to consider whether "payback period" is the most appropriate financial measure for a municipal utility. An alternative measure might be impact on rates.

Each of the other accounts contain attributes which either must be or have been chosen to be measured more subjectively. For example, the social account contains the attribute "resident lifestyles" but no indication is given as to how the impacts of a resource choice on resident lifestyle are determined or what differentiates a slight negative impact from a significant negative impact. Similarly, resource choices may have an air emissions impact which is positive, slightly negative, significantly negative or severely negative but no information is given as to how this is determined.

How the chosen attributes are to be used to evaluate the resource options is somewhat vague. It might be helpful to specifically spell out what is meant by a severe impact so that evaluation of resources can be done on a consistent basis. Commission staff are concerned that over time there may be inconsistent determinations as to what constitutes a severe impact.

Based on the above criteria, each of the options was assigned a score between 0 and 100. Options which failed to obtain at least 10 environmental points, 20 financial points or 50 points overall were dropped from consideration. The remaining items were incorporated into the Action Plan and a status ("in progress", "proceed" or "further analysis") was assigned. As a result, there was no attempt made to develop multiple resource portfolios which could be evaluated separately. Given the size of the utility and the resource options being considered, Commission staff find this a reasonable way to proceed.

### **The Action Plan**

Eight options were identified as being in progress, i.e. the City is committed to the project which is now in the implementation stage. This includes the 6 MW Kaplan turbine discussed in the background section of this report and increased participation in WKP's PowerSmart programs, particularly with respect to commercial customers. A further four projects have been identified as projects with which the City should proceed although no firm commitment has yet been made. Five projects have been rated as worthy of further analysis.

The Commission recognizes that its jurisdiction over the City's electric system is limited to ensuring that the costs incurred by the utility are equitably distributed between rural and urban customers and that overtly imprudent costs are not included in the rates of rural customers. Overall, staff believe the City of Nelson has provided adequate detail to allow the Commission to fulfill its mandate.

Commission staff hope that our comments are helpful to you. If you should wish to discuss any of them in further detail, please do not hesitate to call.

Yours truly,



Deborah Emes  
Manager, Strategic Services

DWE/ssc