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**REPORT TO SAANICH PENINSULA WASTEWATER COMMISSION  
MEETING OF THURSDAY 18 NOVEMBER 2010**

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**SUBJECT**      **SAANICH PENINSULA WASTEWATER TREATMENT PLANT THERMAL ENERGY RECOVERY PROJECT – BUSINESS CASE FOR EXTENDING THE SYSTEM TO SERVE THE CENTRE FOR PLANT HEALTH**

**ISSUE**

To provide a business case analysis on the potential system extension to serve the Centre for Plant Health (CPH).

**BACKGROUND**

The facilities manager at the CPH contacted the Capital Regional District (CRD) in March 2010 to discuss the possibility of connecting into the SPWWTP energy recovery system to provide heat to their facilities. On May 6, 2010, CRD staff met with the Canadian Food Inspection Agency (CFIA) facilities management team and gave a presentation on how the SPWWTP thermal energy recovery project might benefit their operations.

In order to define the scope of work, cost of construction and the economic benefits of the project, a business case analysis needed to be prepared. The Consultant's business case analysis (Executive Summary) is included as Appendix A.

**DISCUSSION**

Two potential business cases were analyzed.

Alternative 1

- The CRD purchases, installs, owns and operates all equipment required to connect CPH to the waste heat district energy system (DES).
- The CRD charges CPH for energy supplied at a rate equal to natural gas.
- The CPH owns the greenhouse gas (GHG) offset and related carbon credits.

Alternative 2

- The CRD purchases, installs, owns and operates all equipment up to the CRD/CPH property line.
- The CPH pays for the related material, equipment and installation of the DES within their property line.
- The CRD charges CPH for energy supplied at a rate equal to natural gas.
- The CPH owns the GHG offset and related carbon credits.

A summary of the business case analysis for the two alternatives including assumptions, costs and payback periods are provided in Table 1 below.

**Table 1: Summary of CPH Business Cases**

|  | CPH Option 1     |            | CPH Option 2     |                  |
|--|------------------|------------|------------------|------------------|
|  | CRD              | CPH        | CRD              | CPH              |
| Piping & Distribution System             | \$103,000        | \$0        | \$81,000         | \$22,000         |
| Heat Pumps                               | \$65,000         | \$0        | \$0              | \$65,000         |
| Mechanical & Electrical                  | \$82,000         | \$0        | \$0              | \$82,000         |
| <b>Total Capital &amp; Contingencies</b> | <b>\$413,000</b> | <b>\$0</b> | <b>\$134,600</b> | <b>\$278,400</b> |
| 2013 BAU O&M                             | \$0              | \$67,600   | \$0              | \$67,600         |
| 2013 DES Connected O&M                   | \$26,300         | \$55,200   | \$400            | \$63,200         |
| 2013 O&M Cost Savings                    | \$0              | \$12,400   | \$0              | \$4,400          |
| 2013 Energy Revenue                      | \$49,500         | \$0        | \$34,000         | \$0              |
| 2013 Carbon Credit Savings               | \$0              | \$6,000    | \$0              | \$6,000          |
| Simple Payback (years)                   | <b>17</b>        | <b>0</b>   | <b>4</b>         | <b>29</b>        |
| Complex Payback (years)                  | <b>22</b>        | <b>0</b>   | <b>0</b>         | <b>37</b>        |

Notes:

1. Capital cost represents startup capital in 2010 dollars.
2. The simple payback period was calculated using forecasted utilities rates.
3. The complex payback assumes 100% debt financing at 5% annual interest over a 15 year term.

**IMPLICATIONS**

Not applicable.

**SUMMARY**

This report and the attachment present the two business cases on the potential DES extension to serve the Centre of Plant Health. In late August, the CPH facilities manager presented the draft Business Case Report to their project team in Ottawa and it is now under review.

**RECOMMENDATION**

That the Saanich Peninsula Wastewater Commission receive this report for information.

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AL:ts  
 Attachment: 1