

5

**DURHAM/YORK RESIDUAL WASTE ENVIRONMENTAL ASSESSMENT
DELOITTE & TOUCHE
ENERGY FROM WASTE FACILITY OWNERSHIP AND SERVICE DELIVERY MODEL**

The Solid Waste Management Committee recommends the following:

1. The presentation by Saad Rafi, Partner and National Leader, Remo Bucci, Senior Manager, and Ben Sorensen, Senior Manager, Infrastructure Advisory and Project Finance, Deloitte & Touche, LLP, be received;
2. The recommendations contained in the following report, April 3, 2007, from the Commissioner of Transportation and Works be adopted subject to the following amendments:
 1. Recommendation 1 be amended by adding the words “and referred to staff for a report providing additional information”;
 2. Recommendation 2 be amended by adding the words “in principle” following the word “approve” and by deleting the words “being owned” and adding the words “with majority ownership” following the words “waste facility”; and
 3. York and Durham Regions begin negotiations with the Province to obtain a Power Purchase Agreement for the sale of electricity.

So that the recommendations now read as follows:

1. The report and recommendations of the Deloitte and Touche LLP report “Analysis of Private Sector Involvement for an Energy from Waste Facility” (see *Attachment 1*) be received and referred to staff for a report providing additional information.
2. Council approve in principle the service delivery model as recommended by Deloitte, for the energy from waste facility with majority ownership by the Regional Municipalities of Durham and York and that the facility be designed, built and operated by a private contractor or consortium.
3. York and Durham Regions begin negotiations with the Province to obtain a Power Purchase Agreement for the sale of electricity.

1. RECOMMENDATIONS

It is recommended that:

1. The report and recommendations of the Deloitte and Touche LLP report “Analysis of Private Sector Involvement for an Energy from Waste Facility” (*see Attachment 1*) be received.
2. Council approve the service delivery model as recommended by Deloitte for the energy from waste facility being owned by the Regional Municipalities of Durham and York and that the facility be designed, built and operated by a private contractor or consortium.

2. PURPOSE

The purpose of this report is to obtain authorization for the service delivery model for the energy from waste facility which the two Regions may establish and operate as a result of the Durham/York Residual Waste Environmental Assessment Study.

3. BACKGROUND

On April 21, 2005, Regional Council adopted Clause 1 of Report No.3 of the Solid Waste Management Committee to initiate a partnership with Durham to jointly undertake a Residual Waste Environmental Assessment Study.

On June 23, 2005, Regional Council adopted Clause 1 of Report No. 4 of the Commissioner of Transportation and Works to enter into an agreement with Durham for the Durham/York Residual Waste Environmental Assessment Study.

On February 22, 2007, Regional Council adopted Clause 2 of Report No. 2 of the Solid Waste Management Committee to enter into a Memorandum of Understanding with the Regional Municipality of Durham, governing the process by which the two Regions will undertake the next steps on the joint energy from waste project.

The preferred technology for the study has been identified as being thermal treatment of mixed solid waste and recovery of energy, followed by the recovery of materials from the ash or char. The Environmental Assessment study is now at the stage where the two Regions need to decide on the ownership, governance and financing for the energy from waste plant that may be developed, prior to issuing a request for proposals to pre qualify vendors for the development of the facility.

4. ANALYSIS AND OPTIONS

The firm of Deloitte and Touche LLP was engaged to prepare an analysis to examine alternative methods to deliver the energy from waste facility for York and Durham, including an examination of the appropriate role of the private sector. Deloitte took a four stage approach to preparing the analysis as follows:

1. Identify the options for ownership and governance of the energy from waste facility.
2. Analyze the options including risk assessment, review of case studies and cash flow analyses.
3. Compare the options.
4. Recommend the preferred option.

4.1 Identify Options

Deloitte identified six options for the ownership and governance of the energy from waste facility. The options included a conventional municipal ownership model (option 1) that was used as a comparator to the other five options. Options 3, 4, and 5 involved full or part ownership of the facility by the private sector. The following six options were considered:

4.1.1 Option 1 – Conventional Public Ownership

- The facility is owned by the Regions.
- The Regions provide all the capital and operational funding for the facility and receive all revenues generated.
- The Regions use conventional municipal practices to design, specify, tender and build the facility.
- All operations at the facility are under the direct control of the Regions.
- The Regions guarantee the supply of waste and assume the demand and supply risk of electricity sales.

4.1.2 Option 2 – Public Ownership with Private Design/Build

- A publicly owned corporation or waste authority owns the facility.
- The Regions provide all the capital and operational funding for the facility and receive all revenues generated.
- The Regions set design specifications and a private contractor designs and builds the facility.
- The Regions set operational specifications for a private contractor to operate the facility.
- The Regions guarantee the supply of waste and assume the demand and supply risk of electricity sales.

4.1.3 Option 3 – Public Ownership with Private Design/Build/Operate

- All assumptions for this option are identical to option 2 except the facility is designed/built/operated by a private contractor.

4.1.4 Option 4 – Public/Private Ownership

- The facility is owned jointly by the Regions and a private partner.
- The Regions and the private partner share in the capital/operational funding and revenues for the facility.
- The Regions set design and operational specifications for a private contractor to build and operate the facility.
- The Regions guarantee the supply of waste and assume the demand and supply risk of electricity sales.

4.1.5 Option 5 – Private Ownership with Transfer to Public Ownership at End of Term

- The facility is privately owned over the term of the contract and then is transferred to the Regions.
- All capital and operational funding for the facility is provided by the private contractor/owner.
- The Regions set design and operational specifications for the private contractor to build and operate the facility.
- The Regions guarantee the supply of waste and assume the demand and supply risk of electricity sales.

4.1.6 Option 6 – Private Ownership with Buyout Option

- The facility is privately owned and the Regions can purchase the facility at market value once the term of the contract has ended.
- All capital and operational funding for the facility is provided by the private contractor/owner.
- The Regions set design and operational specifications for the private contractor to build and operate the facility.
- The Regions guarantee the supply of waste.
- The private contractor/owner assumes any demand/supply risk of electricity sales.

4.2 Analyze Options

4.2.1 Risk Assessment

In its analysis, Deloitte was requested to assess all risks that had a direct impact on the two Regions. Deloitte used a three-phased approach to assess risk. The three phases used, along with the key activities for each phase, are listed below:

Phase 1 – Develop Risk Matrices

- Develop the appropriate risk assessment process.
- Develop a global list of 54 risks for consideration.
- With the assistance of York and Durham staff, screen the list of 54 risks down to a list of 31 risks that were applicable to the consideration of the preferred ownership and governance option for the development of the energy from waste facility.

Phase 2 – Conduct a Workshop to Assess Risks

- Provide workshop participants (Durham/York staff and Environmental Assessment study consultants) with the appropriate documents to review prior to the workshop.
- Conduct a half day workshop to assess risks to the Regions for each ownership/governance option for the energy from waste facility.

Phase 3 – Consolidate and Present Risk Assessment

- Each participant at the workshop provides input on the importance of each risk and how it relates to each ownership/governance option.
- Deloitte consolidates information gathered at the workshop and presents results.

4.2.2 Case Studies and Review of Ownership of Energy from Waste Facilities

Case studies were reviewed by Deloitte, in order to examine the delivery and operational models of selected energy from waste facilities in Canada, the US and Europe. Three case studies in Canada and seven in Europe were specifically reviewed and although they did not represent a statistically significant sample of the total number of energy from waste facilities worldwide, they did allow Deloitte to draw preliminary conclusions from other jurisdictions with similar governance and urban waste experiences.

A limited review of eighty-nine energy from waste facilities in the US was used to determine how other jurisdictions approached service delivery models in the areas of combining design/build with operations and whether ownership of the facility was retained by the public sector.

4.2.3 Cash Flow Analyses of Each Option

Different options for service delivery and private sector involvement can result in different costs to the Regions. The Deloitte analysis involved the development of cash flow models for each option to determine the relative potential cost differences due specifically to service delivery aspects. The analysis was a relative comparison of the implications of a range of private sector options and was not an absolute predictive financial or business plan. A final in-dept business case will be concluded once electrical revenues and final facility size are known as well as the results of the RFQ and RFP processes.

4.2.4 Meetings with York and Durham

Deloitte held meetings with each Region to identify specific matters that were to be considered in the assessment of the six options. The matters considered included the following:

- Objectives regarding the energy from waste facility concerning matters of governance, finance and other issues of public policy.
- Opposition, from a policy perspective, to any of the six options under consideration.
- Any constraints regarding:
 - Roles of each party regarding design, construction or operation/maintenance.

- Private financing/ownership.
- Payment mechanisms/funding.

4.3 Compare Options

4.3.1 Risk Assessment

Deloitte concluded that options 5 and 6 (Private ownership with transfer or buyout) transfer a significant amount of risk from the two Regions to the private sector, as compared to options 1, 2, and 3 (Public ownership with private-sector design/build with or without operations).

4.3.2 Case Study and Review of Ownership of Waste from Energy Facilities

On November 22, 2006, York staff met with staff from Peel Region to get some insight into Peel Region's experience with the management of an energy from waste facility. The energy from waste facility that services Peel Region is owned and operated by the private sector. The contract between Peel and the private owner of the facility is in the last quarter of a 20 year agreement. The facility is not operating at full capacity and significant capital expenditures are required to bring it back to full capacity. Peel staff believe that the facility would have been better maintained and operated if the Region owned the facility, coupled with a private sector contractor operating the plant.

Of the eighty-nine waste to energy facilities currently operating in the US, approximately 52% are owned and operated by the private sector. Approximately 30% are publicly owned and operated by the private sector and the remaining approximately 18% are publicly owned and operated. Of the facilities that are publicly owned, many are owned by waste authorities or large counties.

4.3.3 Cash Flow Analyses of Each Option

The preliminary findings of the analysis of the six options are as follows:

Option 1 (conventional public ownership) presented the lowest nominal cost due in large part to the lack of equity or working capital required. Options 2 and 3 (Public ownership with private design/build with or without operate) were the next lowest costs resulting from the cost of financing of working capital. Options 5 and 6 (Private ownership with transfer or buyout) are next in terms of cost, with Option 4 (Public/Private ownership) being the most expensive due to the financing costs of the Regions' equity contribution.

4.3.4 Meetings with York and Durham

The key findings of the discussions Deloitte had with each of the Regions are as follows:

- Ultimate public ownership is fundamental.
- The private sector would be better able to design, build and operate the facility.
- The impacts to each Region's fiscal and capital plans is a significant consideration.

4.4 Recommend Preferred Option

Based on its analyses, Deloitte concluded that the preferred option was Option 3 (Public ownership with Private design/build/operate), since it allowed the Regions to own the

facility to ensure it was properly maintained, while it also allowed the competitive procurement of private sector efficiency and experience to design, build and operate the facility. In order to ensure a minimum processing capacity for the energy from waste facility both Durham and York Regions each need to commit to minimum waste quantities. Based on this minimum tonnage supply, the Request for Proposals for vendors for the construction of the facility can be finalized and issued in the fall of 2007.

5. FINANCIAL IMPLICATIONS

The construction of the facility is scheduled to begin in 2009. Funds will be included in the appropriate future year capital and operating budgets of the Solid Waste Management Division following the authorization of Regional Council to proceed with the construction of the facility. The estimated construction costs for a 250,000 tonnes/year processing facility are between \$225,000,000 and \$250,000,000.

6. LOCAL MUNICIPAL IMPACT

The success of the energy from waste project will require active public participation for citizens and local municipalities across the Region. Staff and elected officials will be notified of all public meetings and are invited to attend. As the project proceeds, there may be the need for specific input and involvement from one or more local municipalities.

7. CONCLUSION

Deloitte and Touche LLP performed an analysis of six ownership and governance options for the energy from waste facility that were developed as a result of the Durham/York Residual Waste Environmental Assessment Study and recommended that the facility be publicly owned, and that it be designed, built and operated by the private sector.

For more information on this report contact Angelos Bacopoulos, Senior Project Manager of the Solid Waste Management Branch at 905-806-5544 in the Transportation and Works Department.

The Senior Management Group has reviewed this report.

(The attachment referred to in this clause is included with this report.)