Sewage contains ten times the energy needed to treat it.

Dr. David Bagley [1]

Sewage can pay its own way. Why not maximize the benefits, and minimize the cost?

Traditional Treatment Plants

Produce compliant effluent

Resource Recovery Plants

Produce compliant effluent
Produce biodiesel for buses[2]
Produce biogas for cars[3]
Reduce air pollution[4]
Reduce greenhouse gases[5]
Process other organic waste[6]
Recover water for irrigation[7]
Enhance community pride
Sustainability reputation

Benefits

Costs

$557/home/year[8]
Costs **rise** as energy prices rise
Consume electricity & chemicals
Produce sludge & odour

From $120/home/year[9] to ?
Costs **fall** as energy prices rise

A One-Time Opportunity

Water, energy, and climate change will be critical in this century, and they're all connected.

<u>Can we shift</u>:

- From thinking *waste disposal* to *resource recovery*?
- From separate problems to holistic solutions?
- From fear of treatment to hope for sustainability?

Examples of Resources Recovered from Sewage

Sweden	**Biogas for cars, cogen for power & heat** **Phosphorous from sewage**
San Diego	**Plants are net electricity producers** **Water reclaimed for irrigation, industry**
Colton	**Sewage sludge converted to biodiesel**
King County	**Electricity via fuel cells for 1,000 homes**
Vancouver	**Heat pump for the Olympic Village**
Victoria	**?**

Request for Expression of Interest
Terms of Reference

Maximize the environmental, social, & economic benefits:

- Comply with environmental acts and regulations
- Maximize value of recovered resources (e.g. energy, water)
- Maximize social benefits (e.g. tourism, land use)

Minimize the environmental, social, & economic costs:

- Minimize deposits to land
- Minimize all emissions to air from treatment and biofuels
- Minimize upstream impacts of electricity and chemical use
- Minimize social impacts: (e.g. odours, sightlines, noise)
- Minimize cost, with a target of $120 per household per year

Request for Expression of Interest
Timeline

August	Form a Steering Committee
August	Develop the Terms of Reference Solicit ideas through advertisements
November	Share the results with the Board & public
December	Update Minister Penner on progress
1Q2007	Develop an RFP for design and construction
2Q2007	Issue the RFP for design and construction
June, 2007	Update Minister Penner with firm plans

Let's put Mr. Floatie to Work!

Notes

1. Experimental Determination of Energy Content of Unknown Organics in Municipal Wastewater Streams Ioannis Shizas and David M. Bagley, Journal of Energy Engineering, Vol. 130, No. 2, August 1, 2004

2. The oil and grease in Core Area sewage can be converted to enough biodiesel to run 200 buses indefinitely.

3. The other organic waste in Core Area sewage contains enough energy to run 5,000 cars on biogas.

4. Biodiesel and biogas burn with 70% lower emissions of hydrocarbons and other pollutants.

5. Running regional buses and cars on biofuels will displace 33,000 tonnes of greenhouse gases per year.

6. European cities commonly process municipal solid waste and sewage sludge in single recovery centres. We can divert as much as possible of the 46 million kgs/year of organic waste from the Hartland Landfill.

7. Water is being recovered for irrigation and industrial use in San Diego, California

8. Per the 06 July, 2005 CRD Information Report #EHQ 05-86. The $447 million estimate for two plants was prepared by one consultant based on unrecorded directions from the CRD (per the CRD's response to a 2006 Georgia Strait Alliance FOI request). The estimate does not include federal or provincial cost sharing, and was criticized in section 4.9, page 98 the SETAC report.

9. The RFEI will help answer the question of cost, but the cost of traditional treatment gives a target based on:
   a) costs paid by residents of North Saanich and Sidney through the CRD's Central Saanich WWTP
   b) costs paid by residents of other Canadian cities
   (ref. CCME Municipal Wastewater Development Committee, Economic Implications Sub Committee),

   ... before accounting for the value recovered resources.