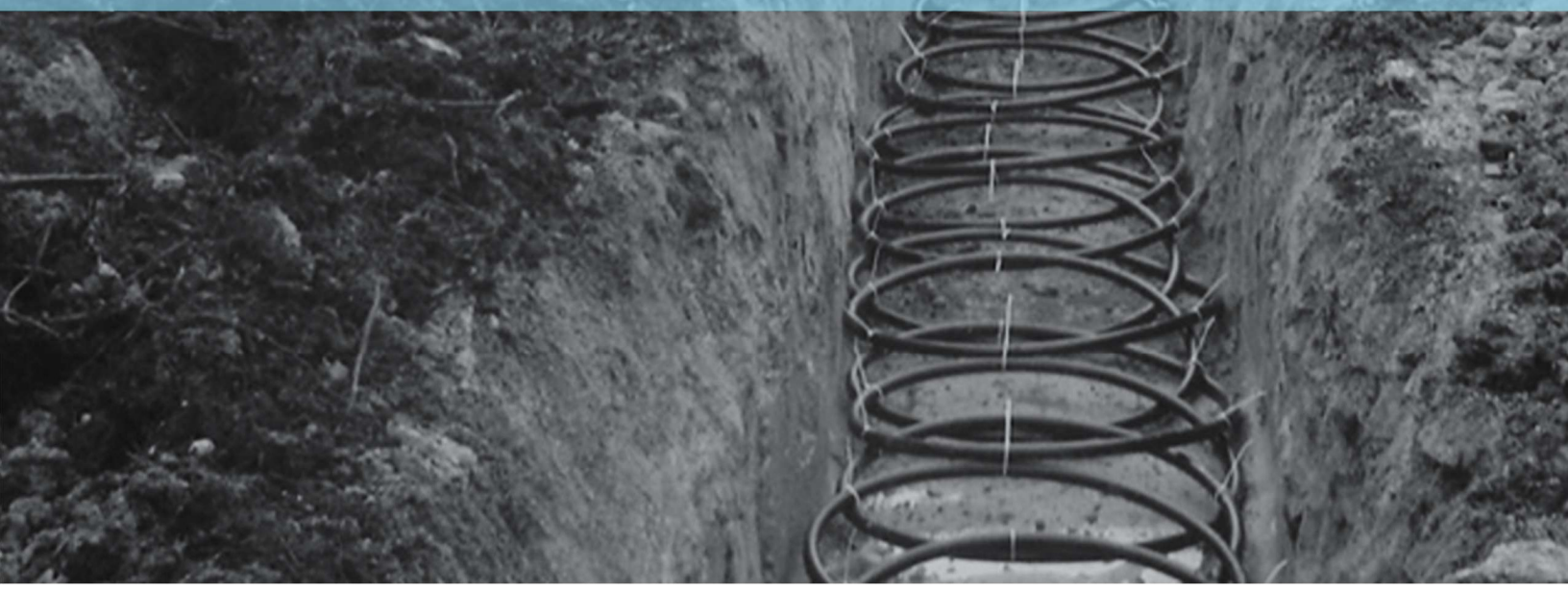
Town of Gibsons

Gibsons District Energy Utility Review Summary Report



MAY 2020 | File: 1300.0118.01

Revision	Issue Date	Prepared By	Reviewed By	Comments
R0	May 12, 2020	W.Giratalla	S.Brubacher	Draft Report
R1	May 15, 2020	W.Giratalla	S.Brubacher	Final Report

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1.0 INTRODUCTION

Urban Systems Ltd. (Urban) was engaged by the Town of Gibsons (Town) to complete a review of various options for the Town's existing Gibsons District Energy Utility (GDEU).

The Town currently owns and operates a geoexchange-based utility that was initiated in 2009/2010. The system was originally planned to service 160 homes. However, due to higher than anticipated costs, the project was scaled back and currently services 58 homes in Phases 1 and 2 of the Parkland subdivision; one property has two connections which brings the total number of customer accounts to 59. Due to some issues in 2017 with the GDEU, as well as lack of funding for expansion, homes in subsequent phases of the Parkland subdivision (approximately 80 homes) were not required to connect to the GDEU as planned. The Town currently operates the GDEU at a financial loss each year.

In 2017, a leak in the GDEU piping infrastructure resulted in a loss of heat transfer fluid and residents lost heat service during sub-zero temperatures. The leak was repaired, and backup boilers were installed at a considerable cost to the Town. From a business perspective, and applying current costs and lessons learned, an important step after this breakdown was to create an updated business plan to establish viable options for the future of the GDEU. The Town commissioned Urban to complete an initial analysis to determine the viability and financial impact of expanding or retaining the system.

One of the specific questions that Council and some residents had was "what are the options where some customers can opt out of the system?" Two of the options examined in this report allow for this but in the other remaining options, any revenue lost from customers disconnecting would have to be made up from other GDEU customers otherwise the Town would continue to operate the system at a loss.

The following possibilities were considered as part of the subject analysis:

1. **GDEU System Expansion**
    a) Up to the capacity of the existing pumphouse in 20 years
    b) Up to the capacity of the existing pumphouse in 30 years

2. **Continue Servicing Existing GDEU Customers**

3. **Decommission GDEU System**
    a) Immediate Decommissioning
    b) Phased Decommissioning

4. **Sell DE System to Private Utility Company**

2.0 ANALYSIS RESULTS

This section describes the analysis results for the options described above. Key analysis parameters and assumptions can be found in **Appendix A.**

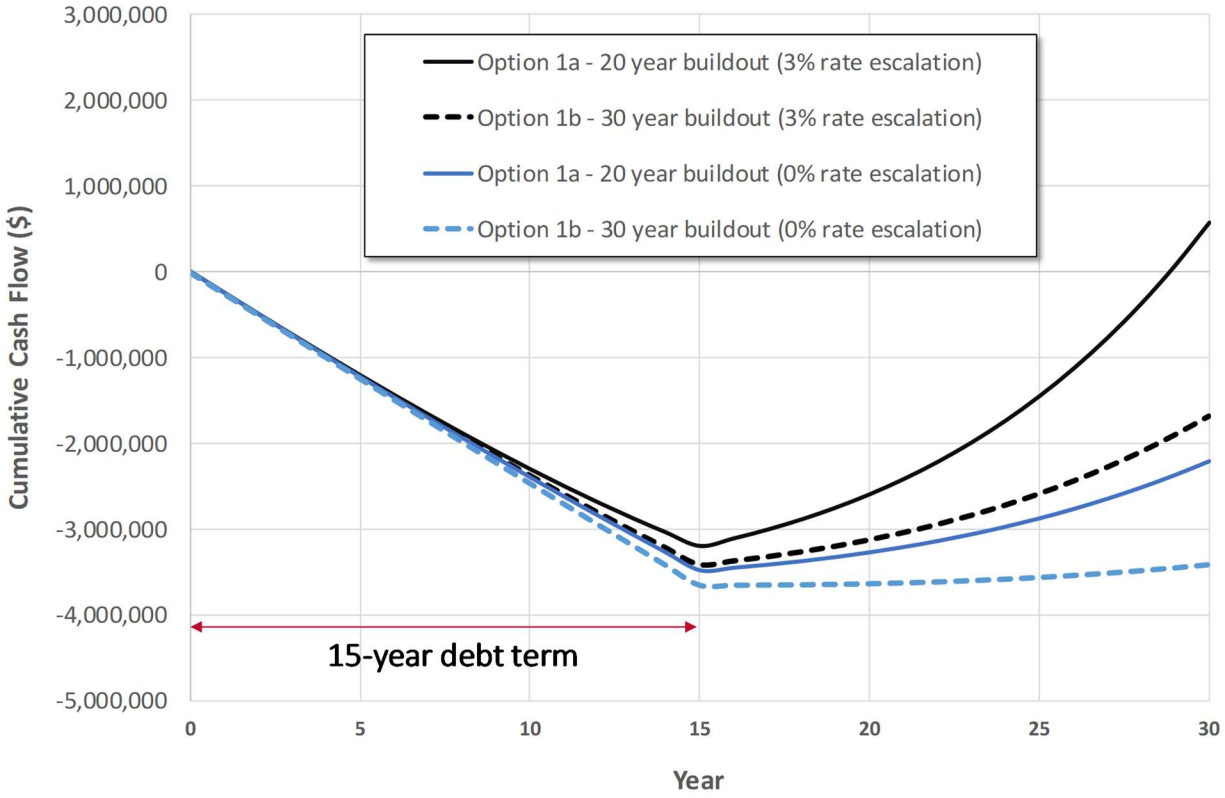
2.1 OPTION 1 – EXPAND GDEU SERVICE AREA

The pumphouse has the capacity for the connection of an additional ten fields to the system. These ten fields could provide service to an estimated additional 168 homes, potentially bringing the number of homes serviced by the GDEU to 226. The cost of the initial installation was approximately $1 Million (2010 dollars) which was largely funded by grant and gas tax. This does not include the cost of the distribution piping, which was constructed by the developer.

Two build-out scenarios were considered for expanding the system: Option 1a examined system expansion over a 20-year build-out timeframe while Option 1b considered system expansion over a 30-year build-out timeframe. Two rate scenarios were also considered: a 0% annual rate increase and a 3% annual rate increase. **Figure 2.1** illustrates the potential cumulative cash flow over time for these different scenarios. As shown, the only scenario with a positive cash flow over time is Option 1a (20-year build-out) that includes a 3% annual rate increase. It should be noted that the build-out timeframe is outside of the Town's control and will be dependent on market demand for new housing and the development of a limited number of properties within a viable distance to the pumphouse.

The scenarios presented assume that the Town debt finances all of the capital required to expand the GDEU. It is also assumed that all customers are subject to the same utility rates. Further detail about assumptions can be found in **Appendix A**.

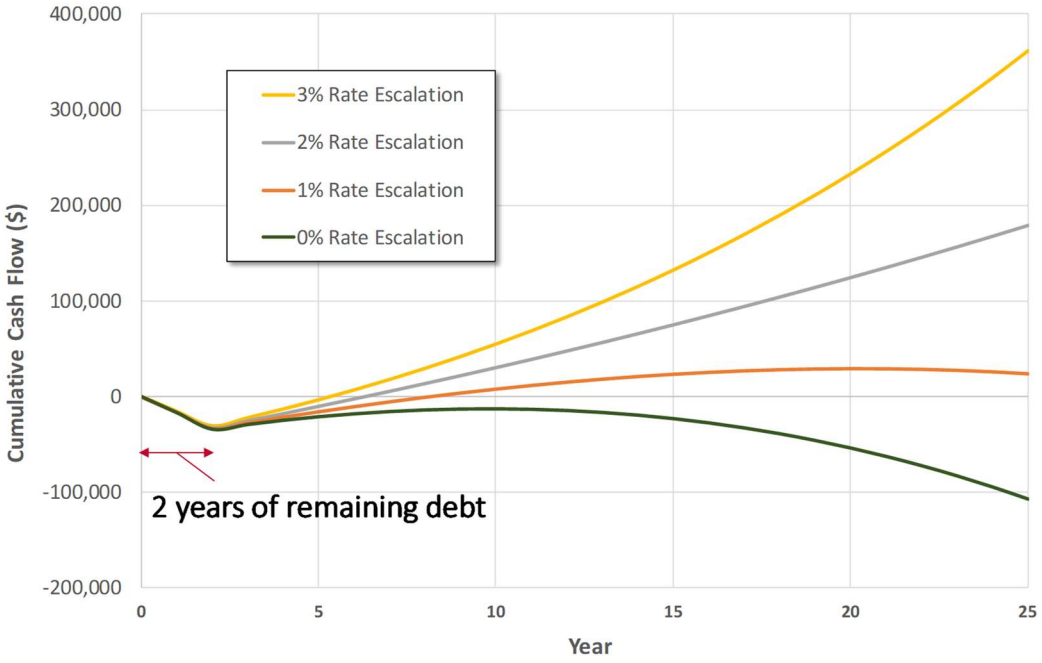
Figure 2.1: Potential Cumulative Cash Flow Scenarios for Option 1 (DE System Expansion)



2.2 Option 2 – Continue Servicing Existing GDEU Customers

This option examined continuing to service the Town's existing 59 GDEU connections without any expansion of the service. Various rate scenarios were considered for this option from a 0% annual rate increase up to a 3% annual rate increase. **Figure 2.2** illustrates the potential cumulative cash flow over time for these different scenarios. As shown, a 2% - 3% annual rate increase would be required to continue ensuring a positive cumulative cash flow over time for the GDEU. This assumes no unexpected major system repairs (e.g. another GDEU leak) over the 25-year timeframe. The scenarios presented assume that the Town must still pay off existing debt from the initial capital expenditure. Further detail about assumptions can be found in **Appendix A**.

Figure 2.2: Potential Cumulative Cash Flow Scenarios for Option 2 (Service Existing DE Customers)

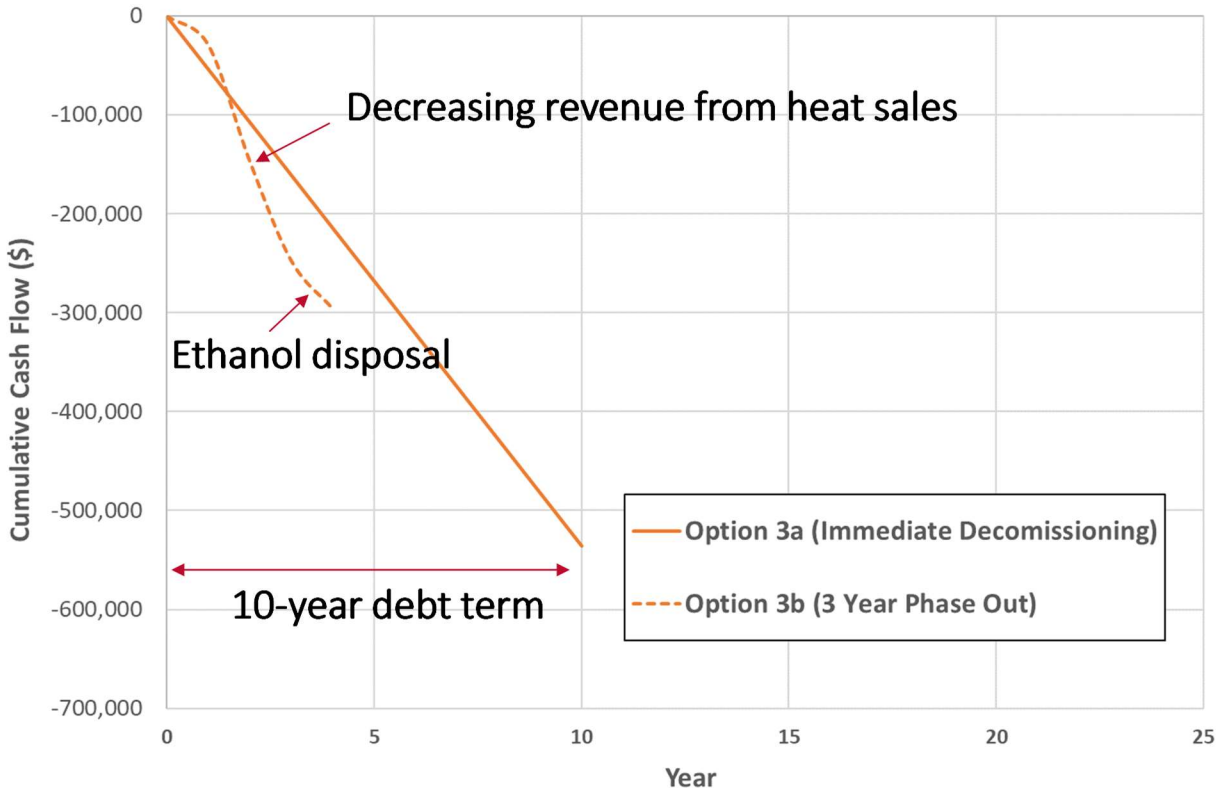


2.3 OPTION 3 – DECOMMISSION GDEU SYSTEM

This option examined decommissioning of the DE system. Two scenarios were considered: Option 3a examined immediate decommissioning while Option 3b considered phased decommissioning over a 3-year period. **Figure 2.3** illustrates the potential cumulative cash flow for Options 3a and 3b. Option 3a assumes that the total cost of decommissioning, including ethanol disposal and the Town incurring the full cost of heat pump replacements, is debt financed over a 10-year period[1]. Option 3b assumes that the GDEU continues to operate for a 3-year period but that customers disconnect from the system at a linear rate over time. For Option 3b, it is also assumed that the Town would incur the cost of compensating owners for the life remaining in each of their respective heat pumps as well as ethanol disposal cost in Year 4 once all customers have been disconnected from the system. Options 3b is proposed to be funded through short-term debt.

[1] It is assumed that the Town's remaining debt ($44k) from the initial capital expenditure is rolled into the same 10-year debt term.

Figure 2.3: Potential Cumulative Cash Flow Scenarios for Option 3 (DE System Decommissioning)



2.4 OPTION 4 – SELL GDEU TO PRIVATE UTILITY COMPANY

A fourth option was reviewed in addition to the options presented to Council on December 9, 2019. This option involves attempting to sell the system to the private sector. A Request for Expressions of Interest or Request for Proposals would be required to establish a list of possible companies in the private sector willing to look at the system. A proponent would be chosen by the Town to undertake their own due diligence to establish whether purchasing the GDEU would be a viable business decision for them. This could potentially help the Town recoup some of the value of this asset but has the following risks:

- Should the chosen proponent determine that there is not a viable business case to be made for purchasing the GDEU, the Town would be responsible for paying for the company's costs to conduct their due diligence. This cost could range from $100,000 to $150,000. Should this occur, the Town would be back to making a decision for decommissioning the system with increased overall costs;
- Customers would not be able to opt out of the system;
- The present GDEU customers would likely be facing increased utility rates, which could be expected to exceed the 3% increase highlighted above.

At this time, the GDEU's depreciated value is approximately $1M; however, it is not certain if or what the private sector would be willing to pay for the asset given the need for the private utility to generate a profit on the investment.

2.5 Review of Options

2.5.1 Additional Considerations

It is evident from a review of background information and from discussions with staff, the operation of the GDEU has been a source of frustration for residents, staff, and Council. Should Council determine that they wish the Town to continue to provide GDEU service to Parkland residents or to expand the system (Options 2 and 1, respectively), the issues listed below would need to be addressed or the risks accepted. In addition, a more detailed business plan would be required to analyze the costs of any improvements to the existing system, staffing requirements, and the establishment of a viable service area along with the associated bylaw amendments.

Leak Detection

Equipment may be able to work for locating leaks in service connection boxes where pipes and valves are readily accessible but there is no reasonable way to track leaks in the distribution piping or the fields. Any expansion of the system may be able to improve on this but little can be done to improve the ability to track leaks in the existing system. Some related issues are highlighted below:

- There is almost 30km of piping in the existing GDEU. If the system continues to be operated there is a risk that, over the lifespan of the system, a leak that is difficult to locate will occur.
- If a leak develops in one of the existing three fields, it is likely the field will need to be abandoned, leading to increased gas usage to offset the lost field or the requirement to construct a replacement field somewhere nearby, if the space exists and funds are available.
- Any leak results in a loss of expensive ethanol. In 2010, the initial cost of ethanol for the Parkland system was approximately $35,000. Over half of this ethanol was lost during the 2017 leak.

Public/Private Responsibilities

There have been a number of ongoing issues that arise from the configuration of piping where the portion of the system that is under Town jurisdiction ends at the property line with the residents being responsible for the system on the private side, including their heating systems. Some related issues are highlighted below:

- If the Town needs to do any work on the GDEU that requires shutting down the system, all heat pumps in the affected area need to be turned off by residents. This is very challenging for Town staff to coordinate with up to 58 different property owners at a time.
- If heat pumps are not shut down correctly, restarting them requires the services of a heat pump contractor.
- There are challenges with the lack or availability of qualified service/repair companies on the coast.
- There are regular maintenance requirements for heat pumps. Not all residents understand this or, if they do, not everyone gets preventative servicing completed on their systems.
- If there are challenges with the operation of a private heat pump, the Town is often blamed for the problem, even if there is nothing wrong with the Town system at the time. This can be very frustrating for residents and staff alike.

Ethanol

Due to the leak in 2017, the ethanol levels dropped to approximately half of the original design of 20% concentration. Ethanol provides freeze protection to the residents' heat pumps. With the lower ethanol levels, it is necessary to run a gas boiler to maintain a temperature that is higher than if there was a 20% concentration. In order to mitigate this issue, additional funding would have to be considered to bring the ethanol levels up to 20%, continue to partially heat the fluid using the gas boilers, or some combination of both.

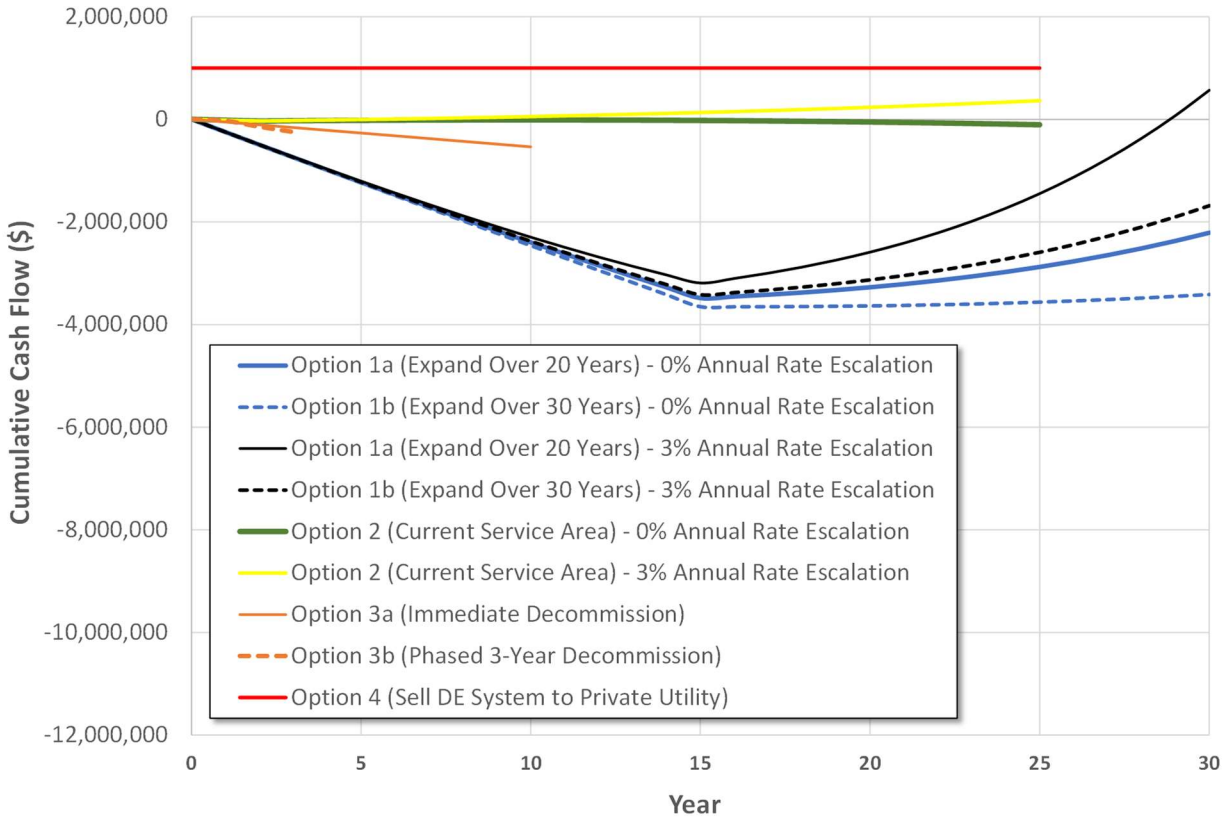
2.5.2 SUMMARY

As shown above, there are advantages and disadvantages/risks associated with the various options considered. There is also a range of possible financial outcomes with some of the variables outside of the Town's control (e.g. market demand for housing near the existing GDEU). **Table 2.1** summarizes the advantages and disadvantages/risks for the different options. **Figure 2.4** illustrates the potential cumulative cash flow for the different scenarios considered above.

Table 2.1: Advantages and Disadvantages of Different Options for DE System

Option	Advantages	Disadvantages/Risks
1a or 1b: Expand DE System	• More residents would benefit from DE system • Larger environmental (greenhouse gas, GHG) benefit	• Poor business case without grant funding or increase in developer contributions • Potential increase in O&M challenges (e.g. leaks) • Does not allow customers to opt out • Requires GDEU utility rate increase
2: Current Service Area	• Consistency of service • Moderate GHG benefit	• Existing & potential future O&M challenges • Does not allow customers to opt out • Requires GDEU rate increase
3a: Immediate Decommissioning	• Town resources could be refocused on other priorities	• Customers to switch heating system and Town to share expenses • Pressures on homeowners and staff • Public perception challenges • Town incurs increased financial loss
3b: Phased Decommissioning	• Less costly to Town than Option 3a • Less disruptive to customers than Option 3a • Customers can opt out • Customers could disconnect any time in 3-year period • Provides the most flexibility	• Existing & potential future O&M challenges while GDEU service is maintained • Public perception challenges • Town incurs increased financial loss
4: Sell DE System to Private Utility Company	• Town potentially recoups a portion of the value of the asset • Consistency of service • Potential to increase GHG benefit	• Town to pay costs incurred by private company if sale is unsuccessful and must then return to one of the other options above • Customers may incur higher GDEU rates in order for utility company to generate a profit and offset risk

Figure 2.4: Potential Cumulative Cash Flow Scenarios for All Options Considered



Option 1 (Expansion) provides a business plan that is not forecast to turn a profit for approximately 25 to 30 years without external funding. In addition, potential changes to the assumed costs and growth could force this timing out much further than 30 years.

Option 2 (Current Service Area) does not provide any realistic way for owners to opt out of the system, requires an annual 3% increase to rates, and the system would remain with its present vulnerabilities.

Option 3a (Immediate Decommissioning) could cause owners unnecessary angst as they would be under pressure to replace their heating systems immediately, plus the public perception of what may be a controversial decision may be greater than a phased decommissioning (Option 3b) scenario. An Alternative Approval Process would also be required to gain electorate approval due to the amount of debt that would need to be incurred.

Option 3b (Phased Decommissioning) is the option that provides the best balance of both fiscal and non-fiscal considerations:

- Retaining the system with its current service area or an expanded service area leaves the Town vulnerable to costly leaks or other operational issues;

- Although the system components are similar to the other Town systems (i.e. water, sanitary and storm drainage), time has shown that the GDEU needs more specialized oversight;
- There is a weak business case for expanding the system;
- Private residences have the option of using Renewable Natural Gas which would equate to the same zero GHG emissions as the GDEU;
- This option provides the most flexibility;
- Only Options 3a and 3b allow owners to opt out of connection to the system;
- Option 3b is the least costly and provides the potential for owners to maximize the benefit from their investment in their current heat pumps.

3.0 PREFERRED OPTION

As described above, the Town's preference is to proceed with Option 3b (phased 3-year decommissioning). This section explores this option in further detail.

3.1 HEAT PUMP REPLACEMENT

By decommissioning the GDEU, residents will need to replace their heat pumps with new infrastructure for the provision of thermal energy (heating and possibly cooling). There are various options available to residents including:

- Natural gas furnaces to replace water-to-air heat pumps (heating only)
- Natural gas or electric boilers to replace water-to-water heat pumps (heating only)
- Optional cooling (e.g. AC coil/unit, air source heat pump)

Table 3.1 outlines the potential costs for the options described above. These cost ranges were informed by communications with two contractors.

Table 3.1: Potential Heat Pump Replacement Costs

Option	Cost Range ($ 2020 CDN)
• **Natural Gas Furnace**[2]	$5,000 – $7,000
• **Natural Gas or Electric Boiler**	$5,000 – $10,000
• **Optional Cooling**	$5,000+ in addition to costs above

Communications with BC Hydro and FortisBC have suggested that residents would not be eligible for the existing rebate programs to replace the existing heat pumps.

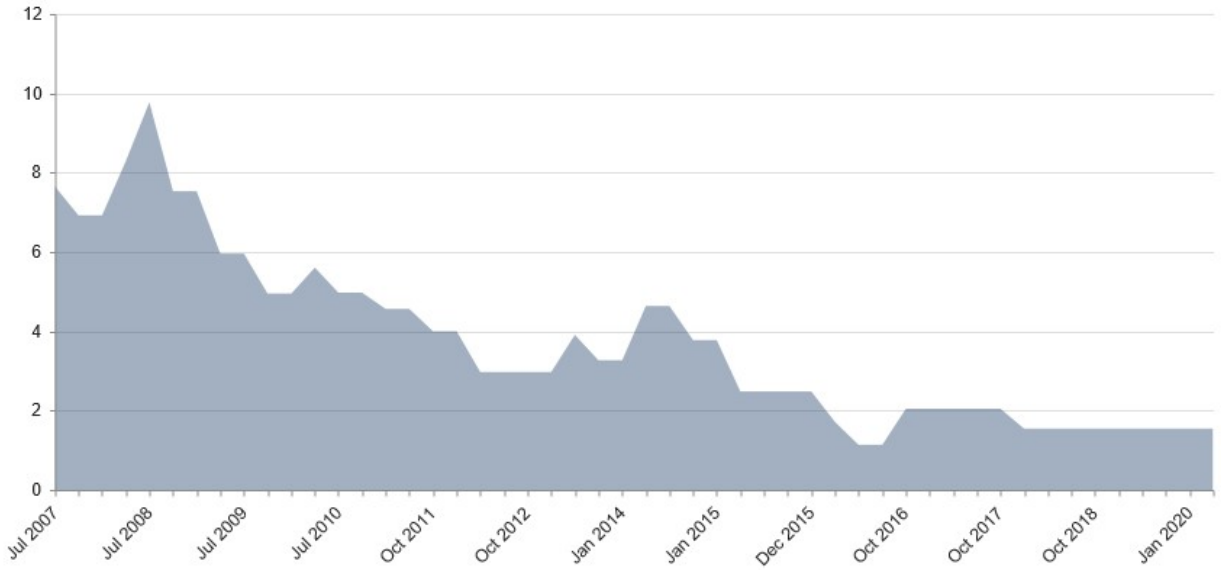
3.2 ONGOING UTILITY COSTS

Each residential customer currently pays the Town approximately $600/year for DE service. Once a resident replaces their heat pump and disconnects from the DE system, the resident will then be subject to ongoing utility costs from a different utility provider. FortisBC will likely provide natural gas service while BC Hydro will likely provide electricity service. In the case of BC Hydro, every residential customer already has an account.

[2] Cost includes a new furnace to replace the existing heat pump system, including all necessary components (gas fitting, venting, control wiring, removing old equipment). Cost range is largely dependent on the type of furnace selected, amount of necessary gas piping and complexity of venting.

Figure 3.1 illustrates FortisBC's historical commodity charge for gas. As shown, the cost of gas has fluctuated over the past 12-13 years. The highest cost in that time period was $9.78/GJ (July 2008) while the lowest cost was $1.14/GJ (May 2016). The current commodity charge is $1.55/GJ (April/May 2020).

Figure 3.1: FortisBC's Historical Commodity Charge for Gas ($/GJ)



Source: *https://www.fortisbc.com/services/natural-gas-services/customer-choice-buying-from-natural-gas-marketers/compare-fortisbc-natural-gas-rates-with-gas-marketers-rates*

The cost of gas (commodity charge) illustrated above is only one component of FortisBC's cost of service. **Table 3.2** shows the other elements of FortisBC's cost of service and illustrates the potential cost range per home (assuming 30 GJ/year).

Table 3.2: FortisBC Natural Gas Service Costs

	Natural Gas Service Costs		
	Current (May 2020)	**Low (May 2016)**	**High (July 2008)**
Commodity Charge	$1.55 / GJ	$1.14 / GJ	$9.78 / GJ
Storage & Transport	$1.46 / GJ (for all scenarios)		
Delivery Charge	$4.35 / GJ (for all scenarios)		
Carbon Tax	$1.99 / GJ (for all scenarios)		
Subtotals	**$9.35 / GJ**	**$8.94 / GJ**	**$17.58 / GJ**
Plus basic charge of $0.4085 / day			
Total (per home)	**$430 / year**	**$420 / year**	**$680 / year**

In the absence of the Town GDEU, customers will have to pay approximately $420 - $680/year for natural gas service. However, as shown above, gas rates may fluctuate more than GDEU rates.

Another option for customers is to purchase renewable natural gas (RNG) from FortisBC. RNG is produced from decomposing organic materials such as food scraps or agricultural waste. Biogas is captured from these decomposing materials and cleaned to create carbon neutral RNG. A customer could purchase 100% RNG at a premium of approximately $200/year (assuming 30 GJ/year)[3]. This would bring their total cost to $620 - $880/year.

3.3 Other Decommissioning Details

Discussions to date with Council have included the parameters listed below to facilitate the decommissioning and to determine the potential financial compensation for owners. This information was communicated to residents in a March 31, 2020 letter (**Appendix B**). Some highlights are provided below:

- That the term of the full decommissioning be set at three years;
- The cost for the replacement of the owners' heating systems would be shared between the Town and the owners based on the Town compensating owners for the value of the remaining useful life of each owner's heating system. This is being proposed as it appears to be the fairest way of compensating owners for heating equipment that ranges from just two or three years old to systems that were installed in 2009.
    - A 15-year lifespan for the heat pumps was originally recommended to determine the value of the remaining life for each heating system;
    - The depreciation of all units would be calculated as of 2023 and owners could stay connected and continue to use the system for up to three years;
    - Based on the information above, $7,500 has been used as the 2020 estimated average cost of a replacement air to water (in-floor) heating unit and $6,000 for an air to air system without air conditioning (see Table 3.1);
    - The Town would compensate owners by purchasing the estimated remaining life of each heating unit from each owner at the time of their disconnection from the GDEU;
    - Owners would be responsible for paying the portion attributable to the depreciated cost of their heating units.

[3] https://www.fortisbc.com/services/sustainable-energy-options/renewable-natural-gas

- The total outlay for the Town for the compensation for heat pumps at a depreciated rate would be approximately $186,000. If the Town was to purchase new heating units for every owner, regardless of the age of the units, the costs would be in the region of $400,000;
- Town costs would be spread out over a period of up to five-years via short-term debt.

- Owners would be responsible for the installation of their new heating systems and would be able to put whatever heating system they want in their homes. Gas or electric furnaces are options as well as air-to-air heat pumps or electric baseboards. Should any of these systems cost less than the value of the replacement furnaces used by the Town in its calculations, the owners will realize the savings, not the Town.

The Town received feedback from some residents and ventured to complete more research in response to the feedback. Some of the feedback was related to the assumed service life of the residents' existing heat pumps as well as the assumed cost to replace their heat pumps. With respect to the service life of the heat pumps, anecdotal information suggested 15 years. A review of the literature[4], however, suggested that 20 years could be expected assuming that the heat pumps are operated and maintained per the manufacturer's recommendations. With respect to the cost to replace the heat pumps, further discussions with a local contractor corroborated the information provided in **Table 3.1**.

Once all residents disconnect from the GDEU, the Town will need to empty and dispose of the heat transfer fluid (water-ethanol mixture) that is in the distribution piping network. A quote to complete this work can be found in **Appendix C**.

[4] https://www.energy.gov/sites/prod/files/guide_to_geothermal_heat_pumps.pdf
https://www.nrcan.gc.ca/energy/publications/efficiency/heating-heat-pump/6833

4.0 COMMUNICATIONS

Due to the nature of the discussions, meetings with Council were held in-camera. However, staff and Council have provided written communication with residents informing them of progress.

- An initial fact-gathering meeting was held with Urban and Town staff on November 28, 2019.
- On December 17, 2019, a meeting was held in-camera with Urban, Town staff and Council to present the initial findings and options.
- This was followed up with a subsequent in-camera meeting on February 18, 2020 where staff provided further details on option 3b.
- On March 3, 2020, an additional in-camera meeting was held with staff and Council to discuss the financial implications and to discuss further refinement of the preferred option.

After the initial communication regarding a public meeting and the subsequent cancellation of this meeting due to the COVID-19 pandemic, two separate written packages were sent to residents (see Appendix B); the first one from staff was sent on March 31, 2020 and a second letter from Deputy Mayor Ladwig on May 4, 2020. The second letter was sent largely to respond to concerns and questions raised by residents in response to the first letter.

The Town's webpage has also been kept updated with information as it has become available.

A number of residents responded to the letters with concerns, questions, and a few in support. As highlighted above, the key items that were raised by residents revolved around the proposed compensation from the Town, specifically, the 15 year service life and the costs for replacement furnaces that were used to calculate the financial compensation.

At the time of writing this report, the intention is to hold one more meeting with Council on May 19, 2020 where the responses from residents would be reviewed and the parameters of the decommissioning would be finalized.

5.0 CONCLUSIONS & RECOMMENDATIONS

Below are conclusions based on the analysis and review conducted above:

- Capital funding from government grants or increased developer contributions will be required to make Option 1 (GDEU Expansion) financially viable. Option 1 will also be dependent on factors that are outside of the Town's control, including the pace of development within a viable service area.
- For Option 1 or 2 (Continue servicing existing GDEU customers), rate escalation is necessary for the long-term viability of the DE Utility.
- Option 3b (Phased Decommissioning) is preferable over Option 3a (Immediate Decommissioning) from a financial perspective. Option 3b also provides the most flexibility while reducing pressure on Town staff and residents.
- Option 4 (Sell the GDEU to a Private Utility Company) may allow the Town to recoup a portion of the value of its asset. However, the Town will be at risk of further delays and of paying additional costs if a sale is unsuccessful. Furthermore, customers may incur higher utility rates from a private utility company.
- The Town has reviewed all the Options and decided to proceed with Option 3b.

In light of these conclusions, it is recommended that the Town proceed with implementing Option 3b: decommissioning the GDEU over a three-year period.

APPENDIX A

Key Analysis Parameters and Assumptions

Appendix A - Key Analysis Parameters and Assumptions

Parameter	Option				
	1a - Expand (20 year build out)	1b - Expand (30 year build out)	2 – Continue Servicing Existing DE Customers	3a - Immediate Decommissioning	3b - Phased Decommissioning
Total number of connections/homes[1]	226	226	59	59	29
Total connected floor space (m^2)[1]	31,174	31,174	7,145	0	3,573
Total heating (MWh/year)[1]	2,210	2,210	510	0	255
Total peak heating load (kW)[1]	849	849	196	0	98
Capital Cost ($) - Remaining[2]	2,844,000	2,844,000	44,000	464,000	$44k + $80k/year
O&M Costs ($/year)[4]	54,450	54,450	30,450	0	30,450
Inflation Rate (%)	2%				
Discount Rate (%)	6%				
Debt Ratio (%)[3]	100%				
Debt ($)	2,844,000	2,844,000	44,000	464,000	44,000
Debt Interest Rate (%)	2.7%	2.7%	3.3%	2.7%	3.3%
Project Life (years)	30	30	25	0	3
Debt Term (years)	15	15	2	10	2
Debt Payments ($/year)	233,093	233,093	23,100	53,565	23,100

Notes:

1. At buildout for Option 1a (in 20 years) & Option 1b (in 30 years)

2. Includes existing debt of $44,000. Option 3 includes cost for Town's portion of 45 natural gas furnaces and 14 natural gas boilers. Option 3b capital cost for HP replacements is phased over 3 years. Cost estimates are "Class D".

3. Capital costs are 100% debt financed by the Town

4. Assuming no unexpected O&M costs

Appendix A - Key Analysis Parameters and Assumptions

Parameter	Option				
	1a - Expand (20 year build out)	1b - Expand (30 year build out)	2 - Continue Servicing Existing DE Customers	3a - Immediate Decommissioning	3b - Phased Decommissioning
Gross Revenue from Energy Sales[5] ($/year) at Year 0	37,350	37,350	37,350	0	37,350
Gross Revenue from Energy Sales[5] ($/year) at Year 5	51,557	46,304	37,350	0	0
Gross Revenue from Energy Sales[5] ($/year) at Year 10	71,167	57,405	37,350	0	0
Gross Revenue from Energy Sales[5] ($/year) at Year 15	98,235	71,167	37,350	0	0
Gross Revenue from Energy Sales[5] ($/year) at Year 20	135,600	88,228	37,350	0	0
Gross Revenue from Energy Sales[5] ($/year) at Year 25	135,600	109,378	37,350	0	0
Gross Revenue from Energy Sales[5] ($/year) at Year 30	135,600	135,600	0	0	0
Net Present Value ($) at 0% annual rate escalation	-1,979,138	-2,322,600	-44,551	N/A	N/A
Net Present Value ($) at 3% annual rate escalation	-1,235,419	-1,834,127	134,750	N/A	N/A
GHG Emissions, base case (tCO_2/year)	468	468	108	108	108
GHG Emissions, project case (tCO_2/year)	82	82	20	108	108
GHG Emissions Reduction (tCO_2/year)	386	386	88	0	0
GHG Emissions Reduction (%)	83%	83%	82%	0	0

Note:

5. Gross revenue assumes no annual rate escalation

APPENDIX B

Correspondence with Residents

TOWN OF GIBSONS
PO Box 340
474 South Fletcher Road
Gibsons BC | VON 1VO

T 604-886-2274
F 604-886-9735

info@gibsons.ca
www.gibsons.ca

March 31, 2020

File No: 5500-07-005

Dear [Owner]:

Re: Gibsons District Energy Utility (GDEU) Decommissioning

As you are aware, the Town had intended to hold a public information meeting regarding the planned decommissioning of the GDEU. However, due to the current health crisis, this is no longer possible. As such, staff have put together an information package for you regarding the process for decommissioning the GDEU.

Background – Options Considered

Town staff and Council analyzed the following possible options for the future of the GDEU:

1. Expand the system to provide service to a larger area;
2. Maintain the current service area only; or
3. Decommission the system.

It was determined that expanding the system (Option 1) was dependent on factors that were outside of the Town's control, the most significant being the pace of development within a viable service area. In addition, some of the challenges with the system would still exist, particularly with the potential cost and disruption of an undetected leak. This option would also not allow customers to opt out of connection to the utility.

Option 2 would require steady rate increases with the same challenges that exist with the system now. Additionally, we would still face the difficulty of dealing with issues with the residents' heat pumps when Town staff are working on the system. This option would also not allow customers to opt out of connection to the utility.

Option 3 was ultimately chosen by Council as the preferred route. This option was further broken down

into two choices: immediate decommissioning or a phased decommissioning over a three-year period. Council ultimately chose the second approach (phased decommissioning) which is being referred to as “Option 3b”.

Option 3b – Phased Decommissioning

The following provides a summary of the phased decommissioning. Additionally, a list of questions and answers that addresses other details follows. Should you have any other queries, please contact the undersigned and staff will respond to you individually.

If warranted, a second communication to address common questions will be provided at a future date.

1. The Town will keep the GDEU operational until September 30, 2023. After that, all properties are to be disconnected from the GDEU.
2. Property owners may choose to disconnect from the GDEU prior to the final disconnection deadline of September 30, 2023. Effective dates for disconnection will coincide with the utility billing periods and will be as follows:

    - October 1, 2020 to March 31, 2021
    - April 1, 2021 to September 30, 2021
    - October 1, 2021 to March 31, 2022
    - April 1, 2022 to September 30, 2022
    - October 1, 2022 to March 31, 2023
    - April 1, 2023 to September 30, 2023

    We require you to notify the Town of the date that your new heating system will be installed which is to be no later than 30 days prior to the beginning of one of the above billing periods as the Town will need to shut off the valves at the property line which will prevent a pressure loss that would affect the remaining GDEU customers. GDEU user fees will no longer be charged, effective the beginning of the next billing period after disconnection.
3. The Town will compensate owners for the remaining life of their heat pumps as of 2023, based on an average life span of 15 years. For example, if your heat pump is five years old at the end of 2023, the Town will compensate you for the 10 years of life remaining.
4. The Town will compensate owners based on a 2023 estimated replacement cost of $6367 for forced air systems and $7959 for in-floor heating systems. This is calculated by inflating the 2020 average purchase prices of $6,000 and $7,500, respectively, by 2% per year.
5. Each owner will be responsible for arranging for the installation of their own replacement heating systems.
6. Some residents may be concerned about the change in their carbon footprint. Fortis Gas provides an option for purchasing Recycled Natural Gas (RNG) which has net zero emissions.

The Town's records indicate that the heating unit at **[address]** had a **[type]** system installed in **[year].**

The age of your heat system in 2023 will be **[age]** and will have **[percentage]** of its life left.

Accordingly, the compensation that the Town will provide is **[percentage]** x **[unit cost]** = **[compensation].** A cheque in this amount will be provided to you once you have provided notice to the Town and have been disconnected from the GDEU.

Council is welcoming any comments on the planned decommissioning. If you wish to do so, please either write to Mayor and Council at the Town Hall or send an email to MayorAndCouncil@gibsons.ca.

If you have any questions regarding this process, please contact the undersigned.

Regards,

TOWN OF GIBSONS

Dave Newman, AScT
Director of Infrastructure Services

cc: Mayor and Council
Emanuel Machado, CAO
Lorraine Coughlin, Director of Finance
Daniel Tardif, Manager of Maintenance and Operations

Gibsons District Energy Utility (GDEU)

Frequently Asked Questions

1. **When do owners receive their compensation cheque from the Town?**

   The owner will be required to notify the Town at least 30 days prior to the start of one of the billing periods identified in the informational letter. Once the Town has physically disconnected the GDEU service at the property line, a compensation cheque will then be mailed to the owner.

2. **Will I still need to pay GDEU fees after I disconnect?**

   Once you have provided notice to the Town and have disconnected from the system, you will be billed for the remaining portion of the six-month GDEU billing period. GDEU user fees will no longer be charged, effective the beginning of the next billing period after disconnection.

3. **What happens if my system costs less than the amount that the Town has estimated?**

   The owner will receive the amount calculated by the Town regardless of the cost of the new system.

4. **What happens if my new system costs more than estimated by the Town?**

   The owner is responsible for all costs above the amount the Town is providing.

5. **Why don't you compensate owners based on the remaining lives left in their systems as of the date they disconnect instead of 2023?**

   The Town is making the GDEU available until 2023 which is why this date is being used. Early disconnection is an option that the Town is providing for owners should they wish.

6. **Why doesn't the Town pay for the full replacement of owner's systems?**

   Council has provided a solution that is fair to all. If the Town paid the same amount to every owner, regardless of the age of the systems, owners with older systems that would normally have to be replaced at the owners' cost would receive a greater financial benefit than those with newer systems

7. **I have already installed an alternate source of heating. Will I get any compensation from the Town?**

   Yes. Compensation will be based on the original installation date of your original system.

8. **Will the covenant requiring connection to the GDEU be removed from the title of my property?**

   Yes. Staff will be facilitating the removal of this covenant from each property.

9. **What kinds of heating systems can be installed in my home?**

   Either gas or hydroelectric is available within the Parkland development.

10. **Is gas available to all the properties?**

    No. However, a contact has been provided below for residents to contact to determine how you may be serviced by gas should you choose.

11. **What will be happening to the pumphouse?**

    At this point, Council has not made any plans for the pumphouse.

12. **What will happen with the ethanol in the system?**

    The Town will drain and dispose of the ethanol in an appropriate manner once all customers have disconnected from the GDEU.

Fortis Gas Contact Information:

Greg Enns

Energy Solutions Manager

FortisBC

1-250-703-6814 | Toll Free: 1-866-225-1188

Greg.enns@fortisbc.com

TOWN OF GIBSONS
PO Box 340
474 South Fletcher Road
Gibsons BC | VON 1VO

T 604-886-2274
F 604-886-9735
info@gibsons.ca
www.gibsons.ca

May 4, 2020 File No: 5500-07-005

Dear [Owner]:

Re: Gibsons District Energy Utility (GDEU) Decommissioning – Additional Details

Since the Town's letter of March 31, 2020, which outlined the planned decommissioning of the GDEU, many Parkland residents have corresponded with us to express their concern and to ask more questions about the strategy. This letter and the attached Questions & Answers provide ongoing responses to those questions and concerns.

We also apologize if that letter caught you off guard, or was a surprise to you. While the GDEU has been a challenge for the Town of Gibsons for a number of years, it's easy to forget that not all residents follow municipal business as closely as we might think.

It was also regrettable that, due to COVID-19, we were unable to hold the community meeting that had been scheduled to discuss Council's proposed approach. I can assure you that Council is committed to making this decommissioning program as amenable as possible for everyone affected, and we know that the best way to do that is with your input.

So our sincere thanks to everyone who has written letters to Council – your questions and feedback are helping us develop the most feasible and fair plan possible under this challenging situation.

Unfortunately, it is not yet possible for Council to meet with residents in person, though that would be our preference. In lieu of that, this second Q&A has been prepared to address most of the questions we've heard to date. We will continue to communicate with you throughout this process.

BACKGROUND

For those who may not be aware of the GDEU's history, it was originally conceived and constructed as a Town initiative to provide a "green" method for heating and cooling all homes in the Parkland development.

Unfortunately, construction costs were far higher than forecast meaning fewer homes than originally planned could connect to the system unless a significant amount of additional capital was invested. Additionally, operating the utility has been more problematic than anticipated. Since 2009, operational and maintenance costs, as well as the costs of improvements to the system, have been considerably higher than envisioned, and occasionally resulted in GDEU customers experiencing service interruptions and inadequate heating.

As well as providing a green heating and cooling solution for Parkland, the utility was supposed to generate additional revenue for the Town. Instead, due to construction costs and other technical challenges, the utility has lost money and is providing service to far fewer properties than originally planned. As a result, the construction, operations and maintenance costs of the utility are currently being subsidized by all Town of Gibsons taxpayers.

It is natural to look back now and say that different decisions should have been made. Hindsight is, after all, 20/20. We do know staff and Council of the day based their decisions on the information that was currently available and with the good of the Town as a whole in mind.

As geo-thermal energy was a new technology to the Town, Council and staff at the time had to rely heavily on the advice of the design consultant. It was not until the construction tenders for the GDEU were submitted, that it became evident that the consultant had provided an overly optimistic cost estimate.

By then, the developer had invested significant funds of their own in the GDEU project, the Town had received grant monies for the project and both the Town and the developer had extensively advertised the construction of the GDEU. Council was faced with the difficult financial and political decision of whether or not to continue with the project and, after weighing the available information, decided to proceed.

Now, Council has the difficult task of making another challenging decision - one which we strongly believe to be in the best interest of the Town, but that we also recognize will negatively affect many of you.

Moving forward, Council has asked staff to report back with answers to the questions we've heard from Parkland residents, so that we can finalize our decommissioning plan. These parameters include, but are not limited to, the following:

- The proposed compensation for residents;
- The estimated service lives of the heating units;
- The estimated cost of replacement of heating units; and
- The term of the decommissioning.

The attached questions and answers will also be discussed by Council.

In closing, we ask for your patience as we continue to work through this difficult process. Hopefully, the attached questions and accompanying answers will address some of your concerns.

And as always, if you have any further questions regarding this process, please don't hesitate to contact Mayor and Council.

Sincerely,

Aleria Ladwig, Deputy Mayor
Town of Gibsons

cc: Council
Emanuel Machado, CAO
Dave Newman, Director of Infrastructure Services
Lorraine Coughlin, Director of Finance
Daniel Tardif, Manager of Maintenance and Operations

Gibsons District Energy Utility (GDEU)

Frequently Asked Questions

1. **Where did the estimated cost of a replacement heating unit come from?**

   The Town's consultant (Urban Systems) researched and provided this information. Council has asked for an additional review of this information and staff will be reporting back to Council with quotes from local contractors and supporting documentation.

2. **Why was the service life of our furnaces established to be 15 years?**

   The Town's consultant researched and provided this information. Council has asked for an additional review of this information and staff will be reporting back to Council with any updates and supporting documentation.

3. **Has the cost of air conditioning been included in the estimated cost of a replacement heating unit?**

   No. However, staff have asked the consultant to provide the cost of this option for Council's information.

4. **Why hasn't the consultant's report been made available?**

   To date, the consultant has provided their information via presentations to Council. The plan has been to obtain input from residents so that the report would reflect community feedback for Council deliberation and decision. This report is currently being drafted and Council will discuss the release of the report when it's complete.

5. **Why do we have to pay for the balance of a billing period, regardless of when we disconnect?**

   It creates a significant amount of additional staff time to adjust utility bills multiple times per year. For that reason, the semi-annual billing dates have been provided to Parkland residents so they may coordinate the timing of the replacement of their furnaces accordingly. However, this item will be brought back to Council for additional discussion.

6. **Will the Town provide any support and guidance to residents as they move to change their heating units?**

   Staff will be discussing with Council what form this support could take. We understand that when determining the best type of replacement heating system for your home there are options to consider such as gas or electric furnaces, baseboard heaters, or air to air heat pumps.

   The Town is unable to recommend one installer over another as this could be viewed as

favoring a business or businesses. However, we can tell you that most of the systems in Parkland were installed by Thomas Heating and Electric. Regardless, there are other heating contractors on the Sunshine Coast and in Vancouver that may be able to take on the replacement of your heating systems.

7. **Can you please provide a copy of the covenant registered on our properties?**

   Yes, Please see attached.

8. **What legal right does the Town have to decommission the system and determine the amount of compensation money without consulting the GDEU customers?**

   The District Energy covenant that is registered on each property within the service area sets out the terms of the connection of properties to the GDEU, indemnifies the Town, and states that the Town is under no obligation to compensate owners for any financial loss.

   Despite this, Council recognizes the hardship from decommissioning the system will place on residents and wants to provide compensation to GDEU customers based on the age of their heating units.

9. **This development is advertised as 'green'. How does the decommissioning of the GDEU affect this feature?**

   The "Built Green" covenant that is registered on parcels within the Parkland development refers to the Built Green certification of the Canadian Home Builders Association. Built Green is a sustainable standard of building, which is intended to address: energy & envelope, materials & methods, indoor air quality, ventilation, waste management, water conservation, and building practices. It does not apply to the service from the GDEU.

10. **Has the Town considered compensating the GDEU customers for 'pain and suffering' for having to deal with the replacement of their heating units?**

    The Town has provided the GDEU service without rate increases since the first home was connected. To date the utility has been operating at a loss, with other taxpayers in the Town compensating most Parkland residents for their connection to the GDEU. Any further compensation would be further burdening all taxpayers in the Town.

11. **Why have discussions regarding the decommissioning been taking place behind closed doors?**

    Closed meetings are a standard, strictly regulated practice under the Community Charter and can be used when dealing with negotiations, contracts, legal advice or other related discussions respecting a municipal service, such as the GDEU. Council has the option after a closed meeting to release some or all of the information discussed if they deem it appropriate and will continue to do so as this program develops.

APPENDIX C

Quote for Ethanol Disposal

ChemCare®
Sustainable Services

Univar Solutions

Date: 01/30/2020

Company Name: Urban Systems

Attention: Waleed Giratalla
Phone: 778.846.1278
Email: Wgiratalla@urbansystems.ca

Dear Waleed,

Thank you for the opportunity to provide our proposal for your waste management requirements. Univar Solutions, through our ChemCare® services, is pleased to offer the following proposal for your consideration.

Item	Price/Unit	Units	Total
Disposal	$0.44/liter	61,000 liters	$26,840.00
Vac Truck x2	$330/hour	10 hours (best)	$3,300.00
	$330/hour	20 hours (worst)	$6,600.00
Super B	$160/hour	10 hours	$1,600.00
		20 hours	$3,200.00
Transport (barge+Ferry)	$5900.00		$5,900.00
Documentation	$35.00	3 units	$105.00
Meals and accommodation if project is two days			$650.00
Total (best case)			**$37,745.00**
Total (worst case)			**$43,295.00**

-Transportation charge based on an estimate.
-Disposal cost is dependent on actual volume.
-Project estimate is based on information provided on the material and system to be drained
-Best efforts have been made to estimate cost from the supplied information.
Equipment time is dependent on the site scenario

Comments:

1. Surcharges or rejection fees will apply for off-spec material or material which does not meet acceptance criteria.
2. If rinsing of vacuum truck or turbo vacuum truck is required $350.00 flat rate will apply.
3. Above pricing does not include applicable taxes.

Prices are based on the profile information and/or representative sample(s) submitted to the Univar Solutions approved ChemCare partner. Waste not matching the specifications of the approved waste profile or streams requiring special packaging are subject to surcharges and/or may be returned to the generator. Surcharges (if any) may not be known until a lab analysis is performed on each shipment. Should changes occur to your operations or processes which generate waste stream(s) notification is required to Univar to ensure records are changed as mandated by law. Any additions or changes to the information provided may result in pricing adjustments.
Prices are subject to change upon 30 days notice, payment terms are Net 30 days with approved credit. Prices above do not include applicable taxes.

Prior to waste pick up the Generator guarantees and is responsible that container integrity and appropriateness meets all TDGA requirements. Assistance is available from Univar Solutions should questions arise.

At the date of each shipment, a standard form Handling Agreement will accompany the regulated Waste Manifest, and must be signed by your authorized representative. An example of this Handling Agreement, which explains the Generator's, Receiver's and Univar Solutions respective responsibilities regarding the waste quoted, is enclosed for your review. As this document sets out each party's various responsibilities, including proper characterization of the waste stream and indemnification obligations, it is important that it be reviewed and understood by all parties prior to beginning shipments.

We look forward to providing these services to you in the near future. Please call should you have questions, or if we may be of further assistance.

Sincerely,

Account Manager
Cell: 604.612.7231

CUSTOMER ACCEPTANCE: Please sign below and deliver by e-mail to Sina.najafi@univarsolutions.com

Authorized Signature Date PO#