



YUKON ENERGY CORPORATION

2022 Low Water Reserve Fund ("LWRF") Report and Energy
Reconciliation Adjustment ("ERA")
RESPONSES TO INFORMATION REQUESTS

May 16, 2023

**Utilities Consumers' Group
(UCG)**

1 **REFERENCE: Application**

2
3
4 **QUESTIONS:**

- 5
- 6 a) On Table 1.1 LWRF Calculations, for L1a-L1d please provide the pages from
7 Board decision of the 2021 GRA.
8
- 9 b) On Table 1.1 LWRF Calculations please explain how you determined the Diesel
10 Fuel Cost per kWhr.L1a and LNG Fuel Cost per kWhr. Line 1b?
11
- 12 c) Please explain how the 2022 GRA Average Fuel cost is lower than the cost for
13 2017-18 GRA for 2019 and 2020 (the last documents UCG can find on the LWRF)
14 when these fuel prices have been going upwards?
15
- 16 d) Why do you not use the average fuel prices (both LNG and diesel) for the year of
17 calculations?
18
- 19 e) On Table 1.1 LWRF Calculations please provide the page/s from Board decision
20 or compliance filing for 2021 GRA showing YIS firm Load forecast Line L1c and
21 GRA Thermal Generation forecast Line L1d.
22
- 23 f) On Table 1.1 LWRF Calculations please state what you mean by sub heading
24 Assumptions and then on all the lines below this you have Actual?
25
- 26 g) On Table 1.1 LWRF Calculations what do mean when you state Assumed Actual
27 Generation Sources in the subtitle from L5 onward? How can this be both?
28
- 29 h) On Table 1.1 LWRF Calculations for L11 please provide all sources with amounts
30 of each IPP generation.
31
- 32 i) On Table 1.1 LWRF Calculations please explain the discrepancy of LNG vs. Diesel
33 40/60 used for this calculation and GRA forecast at 90/10? How does this affect
34 the outcome of the LWRF?
35
- 36 j) For Table 1.1 LWRF Calculations LTA Thermal Calculation at bottom of the
37 Attachment 1 page for 2022 please explain these calculations.
38

1 k) Although the YEC will claim this is not part of this process, please provide all the
2 documentation report to the YUB on the 2021 LWRP. This is necessary for
3 continuity. This is nowhere to be found in the web site.

4
5 l) Please explain if and how the ERA determination for 2022 affects the LWRP.

6
7 m) Please explain if and how the LTA Thermal Adjustment for WH Uprates affect the
8 LWRP outcome.

9

10

11 **ANSWER:**

12

13 **(a), (b) and (e)**

14

15 The LNG and diesel fuel prices in lines 1a and 1b in Table 1.1. of Attachment 1 of the
16 LWRP 2022 Report are the 2021 GRA approved prices. These fuel prices are approved
17 by YUB Order 2022-03 [see section 5.2.1] during the review of YEC's 2021 GRA.

18

19 Please see Table 1.1-1 of YEC's 2021 GRA Compliance Filing filed on April 14, 2022
20 which shows 2021 test year total loads and LTA thermal, as well as LNG and weighted
21 average diesel fuel costs.

22

23 **(c) and (d)**

24

25 In accordance with the LWRP Term Sheet, the fuel costs for the 2022 LWRP calculations
26 are based on the last approved average cost of LNG and diesel fuel for YEC per kWh
27 based on the most recent YEC GRA, which was the 2021 GRA. The variances between
28 the GRA fuel prices and actual fuel prices are dealt with through Fuel Price Variance
29 Account (Rider F) on a monthly basis. Please also see the response to (a), (b) and (e)
30 above.

31

32 **(f)**

33

34 The word "assumptions" is intended to refer to the descriptions of the lines of the LWRP
35 table. Going forward, YEC will remove the word "assumptions" from the LWRP table as
36 each line of the table is self-explanatory.

37

1 **(g)**

2
3 Please see the responses to YUB-YEC-1 (a) and (c) that explain the adjustments made
4 to remove the secondary sales related generation from the total actual generation and
5 actual hydro generation. Subject to this adjustment, the numbers are actuals.

6
7 **(h)**

8
9 The IPP sources for 2022 are as follows:

- 10 • 0.216 GWh from Mount Sima Solar Project [Nomad]
11 • 1.494 GWh from North Klondike Highway Solar [Solvest]
12 • 0.242 GWh from Dome Road Solar Project [KDO]

13
14 **(i)**

15
16 Please see the response to YUB-YEC-1-2 (a) and (b).

17
18 **(j)**

19
20 The calculations in the 2022 LWRP Report, Attachment 1, Table 1-1 under the heading
21 “LTA Thermal Calculations for 2022 for Line 14 in Table 1-1” are intended to show details
22 of the LTA thermal generation calculation for 2022 using the last GRA approved LTA
23 annual hydro generation table. This LTA number is then used in Table 1-1, line 14.

24
25 **(k)**

26
27 The LWRP 2021 report was reviewed as a separate proceeding by the YUB, in which the
28 UCG also participated. The documents related to that proceeding are available on YUB’s
29 website.

30 [https://yukonutilitiesboard.yk.ca/proceedings/yec-low-water-reserve-fund-and-energy-
31 reconciliation-adjustment-proceeding/](https://yukonutilitiesboard.yk.ca/proceedings/yec-low-water-reserve-fund-and-energy-reconciliation-adjustment-proceeding/)

32
33 **(l)**

34
35 The ERA determination does not affect the LWRP calculations.

1 **(m)**

2

3 The WH2 and WH4 uprates increase hydro generation and as a result, reduce the actual
4 and LTA thermal generations. On this basis, like any other hydro source, the impact from
5 the uprates to the LWRF relates to the variation between the actual and LTA hydro
6 generations which impacts the LTA thermal determination.

**Yukon Utilities Board
(YUB)**

1 **REFERENCE:** Application, PDF page 2, Footnote 1

2
3 **ISSUE:** Proportion of thermal energy deemed to be Liquid Natural Gas
4 (LNG)

5
6 **QUOTE:** LNG is assumed to displace 90% of the expected long-term average
7 thermal requirements, subject to not exceeding total thermal less
8 estimated diesel at forecast load. Due to higher diesel generation in
9 2022, the LNG is expected to displace about 80% of LTA thermal.

10
11 **QUESTIONS:**

12
13 a) Please confirm that the LTA generation at actual loads are in accordance with the
14 LWRF term sheet last approved by the Board.

15
16 b) Please provide the LWRF term sheet reference that limits the assumed LNG
17 proportion of thermal generation based on the expected (estimated) diesel
18 generation at forecast load.

19
20
21 **ANSWER:**

22
23 **(a)**

24
25 Confirmed.

26 The LWRF Term Sheet requires utilizing the LTA annual hydro generation table for the
27 last approved GRA test year. The 2022 LWRF LTA thermal generation at actual load is
28 calculated using LTA thermal calculation table for the last approved GRA test year
29 [Appendix 2.1, Tab 2, 2021 GRA]. Please see the calculation details in the 2022 LWRF
30 Report, Attachment 1, Table 1-1 under the heading “LTA Thermal Calculations for 2022
31 for Line 14 in Table 1-1”.

32
33 **(b)**

34
35 YEC noticed that there was an error referencing the forecast load in footnotes 1 and 2 of
36 the Application where it says, “subject to not exceeding total thermal less estimated diesel
37 at forecast load”. The correct wording should say “subject to not exceeding total thermal

1 less actual diesel or estimated diesel calculated in accordance with the LWRF Term
2 Sheet”. The reference to the LWRF Term Sheet below explains the details of the
3 calculations.

4
5 The LWRF Term Sheet [Appendix 2.1 to the 2021 GRA April 14, 2022 Compliance Filing
6 in response to YUB Order 2022-03] approved by the Board, under section “LWRF Thermal
7 Savings (Costs)” on page 2.1-2, notes that the fuel mix at 90% LNG and 10% diesel
8 “subject to the constraints (when setting LWRF based on actual load)”. Footnote 10 on the
9 same page clarifies the constraints and calculation of the LNG for the LWRF purposes as
10 follows:

11 The constraints are: (a) when actual thermal > LTA thermal, LNG not exceeding
12 total LTA thermal less estimated diesel (LTA thermal times actual diesel percent
13 of actual thermal); and (b) when actual thermal < LTA thermal, LNG not exceeding
14 total LTA thermal less actual diesel. These constraints reduce LNG share of YEC’s
15 final LTA thermal to less than 90% when actual diesel share exceeds 10% (if actual
16 thermal > LTA thermal) or when actual diesel generation exceeds 10% of LTA
17 thermal (if actual thermal <LTA thermal).

18
19 Please also see the response to YUB-YEC-1-2 (a) and (b).

1 **REFERENCE:** Application, PDF page 2, Footnote 2

2
3 **ISSUE:** Proportion of thermal energy deemed to be Liquid Natural Gas
4 (LNG)

5
6 **QUOTE:** On a long-term basis LNG is assumed to displace 90% and diesel 10%
7 of the expected long-term average thermal requirements, subject to not
8 exceeding total thermal less estimated diesel at forecast load. The
9 diesel generation for 2022 was higher than 10%, therefore, for 2022 the
10 LNG assumed at 80% and diesel at 20% of LTA thermal. On this basis,
11 the expected diesel generation is equal to the actual diesel generation.

12
13 **QUESTIONS:**

- 14
15 a) Please explain how the LNG assumed at 80% was determined for 2022.
16
17 b) If the LNG assumption of 80% is from the LWRF term sheet, please provide the
18 reference.

19
20
21 **ANSWER:**

22
23 **(a) and (b)**

24
25 Please see the response to YUB-YEC-1-1 (b) that provides a reference to the LWRF Term
26 Sheet regarding fuel mix when setting LWRF based on actual load:

27 The constraints are: (a) when actual thermal > LTA thermal, LNG not exceeding
28 total LTA thermal less estimated diesel (LTA thermal times actual diesel percent
29 of actual thermal); and (b) when actual thermal < LTA thermal, LNG not exceeding
30 total LTA thermal less actual diesel. These constraints reduce LNG share of YEC's
31 final LTA thermal to less than 90% when actual diesel share exceeds 10% (if actual
32 thermal > LTA thermal) or when actual diesel generation exceeds 10% of LTA
33 thermal (if actual thermal <LTA thermal).

34
35 The noted constraints reduce the LNG share of YEC's final LTA thermal to less than 90%
36 when actual diesel generation exceeds 10% of LTA thermal. As the actual thermal [39,205
37 MWh, line 7b] is less than the LTA thermal [78,635 MWh, line 14], the LNG is calculated

1 as the total LTA thermal [78,635 MWh, line 14] less the actual diesel [15,704 MWh, line
2 7b1] in accordance with part (b) of the constraints. This results in an 80% LNG [78,635-
3 15,704=62,930/78,635=80%].

1 **REFERENCE:** Application Attachments, PDF page 1, Table 1-1; Application, PDF
2 page 2, Footnote 2

3
4 **ISSUE:** Calculations of thermal costs to LWRF

5
6 **QUESTIONS:**

- 7
- 8 a) Please confirm that the actual amount for YEC grid load (line L2) is a metered total.
9 If not confirmed, please explain what the amount refers to and how it was
10 determined.
 - 11 b) Please confirm that the actual amount for Fish Lake generation (line L3) is a
12 metered total. If not confirmed, please explain what the amount refers to and how
13 it was determined.
 - 14 c) Please explain why YEC hydro (line L6) is not a metered amount.
 - 15 d) Please confirm that the components of line L7 (diesel/LNG) are metered amounts.
16 If not confirmed, then explain why the metered amounts are not used.
 - 17 e) Please confirm that the components of line L7a (diesel/LNG) are metered
18 amounts. If not confirmed, then explain why the metered amounts are not used.
 - 19 f) For line L8, actual IPP deliveries to the grid are used. Please confirm that the IPP
20 number represents deliveries to the grid. Provide the reference in the LWRF term
21 sheet that accommodates for IPPs.
 - 22 g) Lines L16a and L16b are the components for expected YEC thermal generation in
23 rates. The diesel component (line L16a) is derived from the total expected YEC
24 thermal generation in rates (line L16) and the LNG component (line L16b).
25 Therefore, diesel is derived from LNG calculations. Footnote 2 to the Application
26 notes that LNG totals are subject to not exceeding total thermal less estimated
27 diesel at forecast load. Therefore, LNG totals are derived from diesel calculations.
28 There appears to be an inconsistency in these statements. If there is an
29 inconsistency between these statements, please explain the reasons for it.

30
31
32 **ANSWER:**

33
34 **(a)**

35
36 YEC grid firm load in Line 2 of Table 1-1 in Attachment 1 is the actual load related to the
37 firm sales. It is determined as the total metered YEC grid load less generation related to

1 the secondary sales [secondary sales plus line losses] as the LWRF only deals with the
2 firm sales loads. Other than this adjustment, it is a meter generation.

3
4 **(b)**

5
6 The Fish Lake generation in Line 3 of Table 1-1 in Attachment 1 is provided by AEY. YEC
7 assumes it is the total metered generation.

8
9 **(c)**

10
11 Please see the response to (a) above. As the total YEC grid load is adjusted to remove
12 the secondary sales-related generation, the hydro generation in Line 6 of Table 1-1 is also
13 adjusted to remove the secondary sales-related generation. Therefore, it is calculated as
14 total firm load less thermal generation and IPPs.

15
16 **(d)**

17
18 Confirmed.

19
20 **(e)**

21
22 Please note that YEC does not maintain separate meters for Diesel and LNG charged to
23 capital, RFID and maintenance. These are amounts related to Diesel and LNG charged
24 to capital, RFID and maintenance out of total metered Diesel and LNG generations shown
25 under line L7.

26
27 **(f)**

28
29 Confirmed, the actual IPPs shown in Line 8 of Table 1-1 in Attachment 1 are actual
30 deliveries to the Yukon Integrated Grid by three solar projects as shown in response to
31 UCG-YEC-1-1 (h).

32
33 The LWRF Term Sheet [Appendix 2.1 to the 2021 GRA April 14, 2022 Compliance Filing
34 in response to YUB Order 2022-03] as approved by the Board, under the section "LWRF
35 Thermal Savings (Costs)" on page 2.1-2 notes that the "actual YIS load for this
36 assessment is net of long-term average annual (i.e., expected) availability for all
37 renewable sources other than YEC hydro generation, including Fish Lake hydro, and IPP

1 renewable generation". As indicated in footnote 8 on page 2.1-1 of the same document,
2 LTA source availability for IPP is based on available information [this is also consistent
3 with the wording in the OIC 2021/16 with respect to renewable sources other than hydro].
4 As the number of IPP connections is evolving, the LTA availability from this renewable
5 source will change each year. Accordingly, for the purpose of the LWRF calculations, the
6 actual IPP deliveries are used, which is the best available information.

7

8 **(g)**

9

10 Please see the responses to YUB-YEC-1-1 (b) and YUB-YEC-1-2 (a) and (b).

1 **REFERENCE:** Application, PDF page 2; Rate Schedule 42, Wholesale Primary
2 (YEC) – Energy Reconciliation Adjustment (ERA)
3

4 **QUOTE:** The ERA in Rate Schedule 42 states:
5 Charges to YECL will be adjusted on a monthly basis to reconcile actual
6 wholesale purchases to test year forecast purchases during the months
7 when diesel generation in the Hydro zone is on the margin at long term
8 average water flows. To the extent the actual wholesale purchases fall
9 short or exceed forecast wholesale purchases, an adjustment to the
10 YECL bills will be made at a rate equal to the Hydro zone incremental
11 cost of diesel of 32.74 cents per kW.h as approved by the Board in
12 Order 2010-13. Such adjustment for shortfalls will be limited to minus
13 10% of the forecast wholesale purchases in any period.
14

15 **QUESTION:**

16
17 a) Please explain why monthly totals are not provided in determining ERA amounts.
18
19
20

21 **ANSWER:**

22
23 (a)
24

25 The YUB Order 2018-05, Appendix B approved a revised version of Rate Schedule 42
26 that notes the following regarding the ERA adjustment:
27

28 Energy Reconciliation Adjustment

29 YECL's wholesale primary bill will be adjusted at the end of each calendar year by
30 an amount equal to any increase or reduction in thermal generation costs, net of
31 related changes in wholesale revenues, incurred by Yukon Energy as a direct
32 result of actual wholesale purchases exceeding or falling short of Yukon Energy's
33 most recent test year forecast wholesale purchases as approved by the Yukon
34 Utilities Board.
35

36 Accordingly, YEC used the annual load at year end.

1 **REFERENCE:** Application, Excel Workbook, Sheet “Table 2-1 – ERA 2021”, cell
2 **D2 calculation**

3

4 **ISSUE:** Revenue impact

5

6 **QUESTION:**

7

8 a) Please explain why the Fish Lake adjustment in the revenue calculation only
9 includes the calculation from line C1 and not the calculation from line C2.

10

11

12

13 **ANSWER:**

14

15 **(a)**

16

17 The first part of the formula of Line D2 [$D2=A4*(C1+C2)+A3*C1$] of Table 2-1 of
18 Attachment 2 already applies both wholesale rate [C1] and related Rider J [C2] to the total
19 wholesale variance [A4], which includes the Fish Lake adjustment. While the second part
20 of the formula of Line D2 [$D2=A4*(C1+C2)+A3*C1$] is intended to adjust the revenues
21 related to the Fish Lake adjustment since YEC does not earn wholesale revenues from
22 Fish Lake generation.