Undertaking #10 at Page 349, lines 17-19

To rerun John Maissan-YEC-33, Table 3 with the municipal taxes completely removed.

Yukon Energy Response:

Please see Table 1 below that provides a version of Table 3 included in response to JM-YEC-1-33 (d) without the Whitehorse property taxes. The NPV reduction in BESS costs (and increase in ratepayer benefits) is $4.839 million over 20 years.

Table 1: Annual Ratepayer Impacts from BESS (20 MW/ 40 MWh) Assuming the Project Capital Cost 30% above the estimate included in the Application and without Property Tax

	BESS Annual Costs ($000)				BESS Annual Savings ($000)				
$000	Annual Capital Cost	Annual Operating Cost [excl. property tax and recharging]	Annual Net Recharging Cost [15% return loss plus 3% idling loss]	Total Annual Costs	Avoided Diesel Rental Costs	Annual Savings from Operating Reserve Use	Annual Savings from Peak Shifting	Total Annual Savings	Net Annual Ratepayer Savings (Costs) ($000)
	A	B	C	D=A+B+C	E	F	G	H=E+F+G	I=H-D
Year 1	$2,487	$343	$82	$2,912	$1,216	$1,125	$11	$2,351	-$561
Year 2	$2,425	$350	$84	$2,859	$1,265	$1,147	$11	$2,423	-$436
Year 3	$2,364	$356	$85	$2,805	$1,315	$1,170	$11	$2,496	-$309
Year 4	$2,302	$363	$87	$2,752	$1,368	$1,193	$11	$2,573	-$179
Year 5	$2,240	$369	$89	$2,699	$1,423	$1,217	$12	$2,651	-$47
Year 6	$2,179	$376	$91	$2,645	$1,480	$1,242	$12	$2,733	$87
Year 7	$2,117	$383	$92	$2,593	$1,539	$1,267	$12	$2,817	$225
Year 8	$2,055	$390	$94	$2,540	$1,600	$1,292	$12	$2,904	$364
Year 9	$1,994	$397	$96	$2,487	$1,664	$1,318	$12	$2,994	$507
Year 10	$1,932	$405	$98	$2,435	$1,731	$1,344	$13	$3,088	$653
Year 11	$1,871	$412	$100	$2,383	$1,800	$1,371	$13	$3,184	$801
Year 12	$1,809	$420	$102	$2,331	$1,872	$1,398	$13	$3,284	$953
Year 13	$1,747	$428	$104	$2,279	$1,947	$1,426	$13	$3,387	$1,108
Year 14	$1,686	$436	$106	$2,228	$2,025	$1,455	$14	$3,493	$1,266
Year 15	$1,624	$444	$108	$2,176	$2,106	$1,484	$14	$3,604	$1,428
Year 16	$1,563	$452	$111	$2,125	$2,190	$1,514	$14	$3,718	$1,593
Year 17	$1,501	$460	$113	$2,074	$2,278	$1,544	$15	$3,836	$1,762
Year 18	$1,439	$469	$115	$2,023	$2,369	$1,575	$15	$3,958	$1,935
Year 19	$1,378	$478	$117	$1,973	$2,463	$1,606	$15	$4,085	$2,112
Year 20	$1,316	$486	$120	$1,922	$2,562	$1,638	$15	$4,216	$2,294
NPV	**$26,528**	**$5,308**	**$1,286**	**$33,122**	**$22,647**	**$17,612**	**$167**	**$40,426**	**$7,305**

Notes:

1 2021 assumed as Year 1. Capital costs (Table 3-4) and operating costs (Table 3-5) each escalated 2% for one year inflation.
2 YEC WACC at 4.794% per 2021 GRA (real WACC with 2% inflation at 2.739%) is used for all net present values (NPVs).
3 Annual Capital Cost includes depreciation (20 year life) and return on mid-year rate base at YEC WACC of 4.794%.
4 Annual Net Recharging Cost assumes diesel generation for N-1 dependable capacity and operating reserve recharge losses, 75% LNG and 25% hydro for other recharge losses (peak shifting saving already addresses these losses), and hydro for idling losses.
5 Avoided Diesel Rental Costs assumes $168,896 per MW (2022$) and 7.2 MW (4 rental units) of dependable capacity.
6 The table assumes the capital cost if 30% above the estimate included in the Part 3 Application.
7 The table assumes no property tax cost.