



MINE FALLS HYDROELECTRIC FACILITY

PRELIMINARY ECONOMIC ASSESSMENT
OCTOBER 14, 2015



MINE FALLS HYDROELECTRIC FACILITY

<u>Timelines:</u>	Exercise Purchase Option	December 11, 2015 (30 Day Window)	
	Project Closing	Earliest Latest	December, 2016 December, 2017
<u>Other Dates:</u>	Lease Termination FERC Re-License	May 1, 2024 July 31, 2023	
<u>Purchase Cost:</u>	\$4,094,000		

MINE FALLS HYDROELECTRIC FACILITY

Type	Item	Cost
ME	TG HPUs – replace	\$150,000
ME	Drain pump – redundant system	\$50,000
ME	Turbine(s) – overhaul	\$200,000
ME	Turbine Blade Positioning System – recondition	\$100,000
ME	Ancillary – filters, crane motors, etc	\$100,000
EE	Generator – refurbishment	\$300,000
EE	New Station Battery System	\$30,000
EE	PSNH/Eversource – New Interconnection Upgrade	\$30,000
EE	Transformer – rehabilitation	\$80,000
EE	Controls automation	\$200,000
EE	Miscellaneous	\$50,000
Civil	Fish Passage Access way	\$75,000
Civil	Intake gates/trashrack – rehabilitation	\$50,000
Civil	Stoplog/gate replacement	\$200,000
Civil	Roof repair/EE conduit	\$50,000
Civil	FERC Re-License	\$400,000
	Total	\$2,065,000



MINE FALLS HYDROELECTRIC FACILITY

OPTIONS:

Option 1 – City Activates Option to Purchase and Utilizes 3rd Party to Operate

Option 2 – City Activates Options to Purchase and Operates City Department

Option 3 – City Activates Options to Purchase and Re-Sells' Facility

Option 4 – City does not activate option to Purchase in December 2015 window



Mine Falls Hydroelectric Project
9 Year Revenue/Cost Analysis

Option 1
CITY BUYS NOW – CONTRACT OUT ALL OPERATIONS
(AMOUNTS ROUNDED TO 000'S)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Revenue:										
Energy Generation	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$7,923
Renewable Energy Credits	\$366	\$366	\$366	\$366	\$366	\$366	\$366	\$366	\$366	\$3,295
Total Revenue:	\$1,246	\$11,218								
Operating Costs:										
Interest on Bond	\$328	\$322	\$316	\$309	\$303	\$297	\$291	\$285	\$279	\$2,730
Management Fee-10%	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$125	\$1,122
Maintenance Costs	\$150	\$154	\$159	\$164	\$169	\$174	\$179	\$184	\$190	\$1,523
Capital Improvements	\$50	\$447	\$300	\$490	\$425	\$225	\$175	- 0 -	- 0 -	\$2,112
Total Operating Costs:	\$653	\$1,047	\$899	\$1,088	\$1,022	\$821	\$770	\$594	\$593	\$7,487
Net Revenue:	\$594	\$199	\$347	\$159	\$225	\$426	\$477	\$652	\$653	\$3,731

Total 9-year Revenue: \$3,730,687



Mine Falls Hydroelectric Project
9 Year Revenue/Cost Analysis

Option 2

**CITY BUYS NOW – OPERATE AS A CITY DEPARTMENT
(AMOUNTS ROUNDED TO 000'S)**

	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Revenue:										
Energy Generation	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$880	\$7,923
Renewable Energy Credits	\$366	\$366	\$366	\$366	\$366	\$366	\$366	\$366	\$366	\$3,295
Total Revenue	\$1,246	\$11,218								
Operating Costs:										
Interest on Bond	\$328	\$322	\$316	\$310	\$303	\$297	\$291	\$285	\$279	\$2,731
Payroll & Benefits	\$227	\$232	\$237	\$241	\$246	\$251	\$256	\$261	\$267	\$2,219
Maintenance Costs	\$75	\$77	\$80	\$82	\$84	\$87	\$90	\$92	\$95	\$762
Capital Improvements	\$50	\$447	\$300	\$490	\$425	\$225	\$175	- 0 -	- 0 -	\$2,112
Total Operating Costs	\$680	\$1,078	\$932	\$1,113	\$1,059	\$860	\$812	\$639	\$640	\$7,813
Net Revenue	\$566	\$169	\$315	\$124	\$187	\$386	\$435	\$608	\$606	\$3,395

Total 9-year Revenue: \$3,394,922



Mine Falls Hydroelectric Project
9 Year Revenue/Cost Analysis

Option 3
BUY NOW – RESELL IMMEDIATELY

	Year 1	Year 2
SALES PRICE		\$6,300,000 ¹
CITY'S PURCHASE PRICE	\$4,094,000 ²	
GROSS REVENUE FROM SALE		\$2,206,000

¹ \$2,100/kw (2014 market) x 3,000kw

² Lease option price + ½ fish passage upgrade



Mine Falls Hydroelectric Project
9 Year Lease Revenue/Cost Analysis

Option 4
DO NOTHING – CONTINUE LEASE FOR REMAINING 9 YEARS
(AMOUNTS ROUNDED TO 000'S)

	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Revenue	\$74	\$74	\$74	\$74	\$74	\$74	\$74	\$74	\$25	\$620
Energy Payment from Current Co-Licensee	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	0
Total Revenue	\$74	\$74	\$74	\$74	\$74	\$74	\$74	\$74	\$25	\$620
Operating Costs	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	0
Capital Improvements									(\$1,033)	(\$1,033)
Total Operating Costs	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	- 0 -	(\$1,033)	(\$1,033)
Net Revenue	\$74	\$74	\$74	\$74	\$74	\$74	\$74	\$74	(\$1,008)	(\$413)

¹ \$7,000,000 kwhr x 4.9¢/kwhr x 5% + 5,838,799 kwhr x 4.9¢/kwhr x 20%

² 4/12 (May 1 lease ends) x \$74,370

³ ½ x \$2,065,000 capital improvements



MINE FALLS HYDROELECTRIC FACILITY

Option 1 – City Activates Option to Purchase and Utilizes 3rd Party to Operate

Net 9 Year Revenue = \$3,730,687

Option 2 – City Activates Options to Purchase and Operates City Department

Net 9 Year Revenue = \$3,394,922

Option 3 – City Activates Options to Purchase and Re-Sells' Facility

Net 9 Year Revenue = \$2,206,000

Option 4 – City does not activate option to Purchase in December 2015 window

Net 9 Year Revenue = (-\$412,750)