

# NIST BLCC 5.3-20: Cash Flow Analysis

Consistent with Federal Life Cycle Cost Methodology and Procedures, 10 CFR, Part 436, Subpart A

## General Information

File Name:	C:\Users\jkneifel\BLCC5.3-2020\projects\FEMPEnergy.xml
Date of Study:	Tue Sep 01 08:50:43 EDT 2020
Analysis Type:	FEMP Analysis, Energy Project
Project Name:	Heating/Cooling System
Project Location:	District of Columbia
Analyst:	Courtney Mayer
Comment:	Replacement of Baseboard/ AC System with Heat Pump in Park Service House
Base Date:	April 1, 2020
Service Date:	April 1, 2020
Study Period:	15 years 0 months (April 1, 2020 through March 31, 2035)
	End-of-year cash-flow convention used
	All costs in constant dollars (excluding general inflation)

## Alternative: Existing System

### Initial Capital Costs

#### Component: Baseboard Heater

Year Beginning	Total
Apr 2020	\$500
Total	\$500

#### Component: Window AC Unit

Year Beginning	Total
Apr 2020	\$1,000
Total	\$1,000

### Capital Investment Costs

Year Beginning	Initial	Residual (Orig. Comp.)	Replacement	Residual (Repl.)	Total
Apr 2020	\$1,500	\$0	\$0	\$0	\$1,500
Apr 2021	\$0	\$0	\$0	\$0	\$0
Apr 2022	\$0	\$0	\$0	\$0	\$0
Apr 2023	\$0	\$0	\$0	\$0	\$0
Apr 2024	\$0	\$0	\$0	\$0	\$0
Apr 2025	\$0	\$0	\$0	\$0	\$0
Apr 2026	\$0	\$0	\$0	\$0	\$0
Apr 2027	\$0	\$0	\$0	\$0	\$0
Apr 2028	\$0	\$0	\$0	\$0	\$0

Apr 2020	\$0	\$0	\$0	\$0	\$0
Apr 2029	\$0	\$0	\$0	\$0	\$0
Apr 2030	\$0	\$0	\$600	\$0	\$600
Apr 2031	\$0	\$0	\$0	\$0	\$0
Apr 2032	\$0	\$0	\$0	\$0	\$0
Apr 2033	\$0	\$0	\$0	\$0	\$0
Apr 2034	\$0	-\$150	\$0	-\$300	-\$450
-----					
<b>Total</b>	\$1,500	-\$150	\$600	-\$300	\$1,650

### Operating-Related Costs

Year Beginning	Recurring	Non-Recurring	Energy Consumption	Energy Demand	Energy Rebate	Total
Apr 2020	\$50	\$0	\$1,182	\$0	\$0	\$1,232
Apr 2021	\$50	\$0	\$1,174	\$0	\$0	\$1,224
Apr 2022	\$50	\$0	\$1,169	\$0	\$0	\$1,219
Apr 2023	\$50	\$0	\$1,176	\$0	\$0	\$1,226
Apr 2024	\$50	\$0	\$1,187	\$0	\$0	\$1,237
Apr 2025	\$50	\$0	\$1,199	\$0	\$0	\$1,249
Apr 2026	\$50	\$0	\$1,205	\$0	\$0	\$1,255
Apr 2027	\$50	\$0	\$1,203	\$0	\$0	\$1,253
Apr 2028	\$50	\$0	\$1,199	\$0	\$0	\$1,249
Apr 2029	\$50	\$0	\$1,193	\$0	\$0	\$1,243
Apr 2030	\$50	\$200	\$1,184	\$0	\$0	\$1,434
Apr 2031	\$50	\$0	\$1,175	\$0	\$0	\$1,225
Apr 2032	\$50	\$0	\$1,174	\$0	\$0	\$1,224
Apr 2033	\$50	\$0	\$1,172	\$0	\$0	\$1,222
Apr 2034	\$50	\$0	\$1,164	\$0	\$0	\$1,214
-----						
<b>Total</b>	\$750	\$200	\$17,756	\$0	\$0	\$18,706

### Sum of All Cash Flows

Year Beginning	Capital	OM&R	Total
Apr 2020	\$1,500	\$1,232	\$2,732
Apr 2021	\$0	\$1,224	\$1,224
Apr 2022	\$0	\$1,219	\$1,219
Apr 2023	\$0	\$1,226	\$1,226
Apr 2024	\$0	\$1,237	\$1,237
Apr 2025	\$0	\$1,249	\$1,249

Apr 2026	\$0	\$1,255	\$1,255
Apr 2027	\$0	\$1,253	\$1,253
Apr 2028	\$0	\$1,249	\$1,249
Apr 2029	\$0	\$1,243	\$1,243
Apr 2030	\$600	\$1,434	\$2,034
Apr 2031	\$0	\$1,225	\$1,225
Apr 2032	\$0	\$1,224	\$1,224
Apr 2033	\$0	\$1,222	\$1,222
Apr 2034	-\$450	\$1,214	\$764
-----			
<b>Total</b>	\$1,650	\$18,706	\$20,356

## Alternative: New System

### Initial Capital Costs

#### Component: Heat Pump

Year Beginning	Total
Apr 2020	\$3,000
Total	\$3,000

### Capital Investment Costs

Year Beginning	Initial	Residual (Orig. Comp.)	Total
Apr 2020	\$3,000	\$0	\$3,000
Apr 2021	\$0	\$0	\$0
Apr 2022	\$0	\$0	\$0
Apr 2023	\$0	\$0	\$0
Apr 2024	\$0	\$0	\$0
Apr 2025	\$0	\$0	\$0
Apr 2026	\$0	\$0	\$0
Apr 2027	\$0	\$0	\$0
Apr 2028	\$0	\$0	\$0
Apr 2029	\$0	\$0	\$0
Apr 2030	\$0	\$0	\$0
Apr 2031	\$0	\$0	\$0
Apr 2032	\$0	\$0	\$0
Apr 2033	\$0	\$0	\$0
Apr 2034	\$0	-\$750	-\$750
-----			
<b>Total</b>	\$3,000	-\$750	\$2,250

Operating-Related Costs

Year Beginning	Recurring	Non-Recurring	Energy Consumption	Energy Demand	Energy Rebate	Total
Apr 2020	\$100	\$0	\$808	\$0	\$0	\$908
Apr 2021	\$100	\$0	\$802	\$0	\$0	\$902
Apr 2022	\$100	\$0	\$799	\$0	\$0	\$899
Apr 2023	\$100	\$0	\$804	\$0	\$0	\$904
Apr 2024	\$100	\$0	\$811	\$0	\$0	\$911
Apr 2025	\$100	\$0	\$819	\$0	\$0	\$919
Apr 2026	\$100	\$0	\$823	\$0	\$0	\$923
Apr 2027	\$100	\$0	\$822	\$0	\$0	\$922
Apr 2028	\$100	\$600	\$819	\$0	\$0	\$1,519
Apr 2029	\$100	\$0	\$815	\$0	\$0	\$915
Apr 2030	\$100	\$0	\$809	\$0	\$0	\$909
Apr 2031	\$100	\$0	\$803	\$0	\$0	\$903
Apr 2032	\$100	\$0	\$802	\$0	\$0	\$902
Apr 2033	\$100	\$0	\$801	\$0	\$0	\$901
Apr 2034	\$100	\$0	\$796	\$0	\$0	\$896
-----						
Total	\$1,500	\$600	\$12,133	\$0	\$0	\$14,233

Sum of All Cash Flows

Year Beginning	Capital	OM&R	Total
Apr 2020	\$3,000	\$908	\$3,908
Apr 2021	\$0	\$902	\$902
Apr 2022	\$0	\$899	\$899
Apr 2023	\$0	\$904	\$904
Apr 2024	\$0	\$911	\$911
Apr 2025	\$0	\$919	\$919
Apr 2026	\$0	\$923	\$923
Apr 2027	\$0	\$922	\$922
Apr 2028	\$0	\$1,519	\$1,519
Apr 2029	\$0	\$915	\$915
Apr 2030	\$0	\$909	\$909
Apr 2031	\$0	\$903	\$903
Apr 2032	\$0	\$902	\$902
Apr 2033	\$0	\$901	\$901
Apr 2034	\$0	\$896	\$896

Apr 2034	-\$750	\$896	\$146
-----			
Total	\$2,250	\$14,233	\$16,483