

# Project Summary

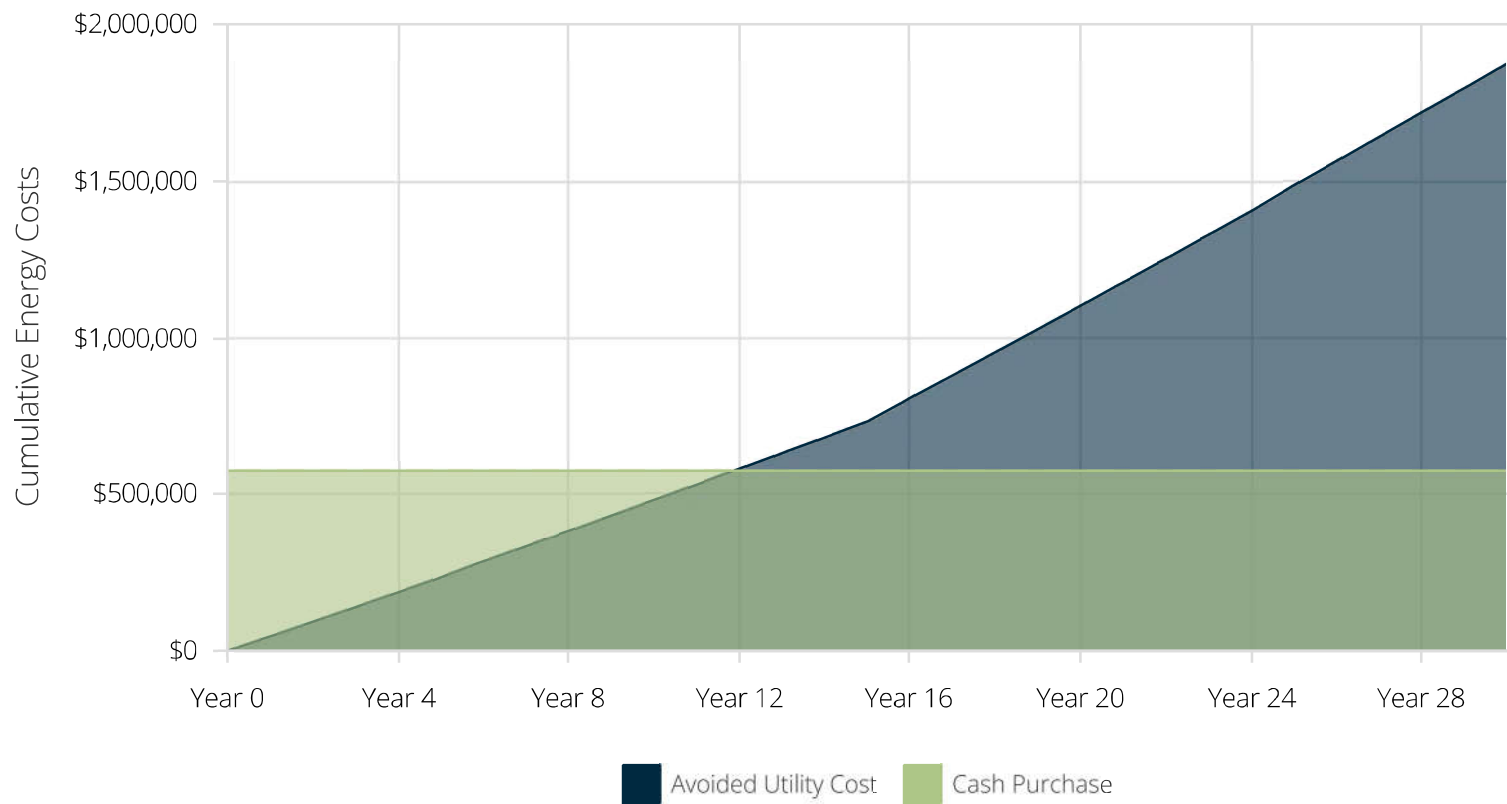
| Payment Options              | Cash Purchase |
|------------------------------|---------------|
| IRR - Term                   | 8.7%          |
| LCOE PV Generation           | \$0.000 /kWh  |
| Net Present Value            | \$307,378     |
| Payback Period               | 11.9 Years    |
| Total Payments               | \$925,000     |
| Total Incentives             | \$350,000     |
| Net Payments                 | \$575,000     |
| Electric Bill Savings - Term | \$1,875,057   |
| Upfront Payment              | \$925,000     |

## Combined ESS Ratings

Energy Capacity: 1,250.0 kWh

Power Rating: 250.0 kW

### Cumulative Energy Costs By Payment Option



# Energy Storage System (ESS) Details

## General Information

Facility: Meter #1 - Park  
Address: NY NY

## ESS System Ratings

Energy Capacity: 1,250.0 kWh  
Power Rating: 250.0 kW

## ESS Equipment Description

Battery Banks: 250kw/1250kWh Energy Storage System  
Inverters: 250kw/1250kWh Energy Storage System

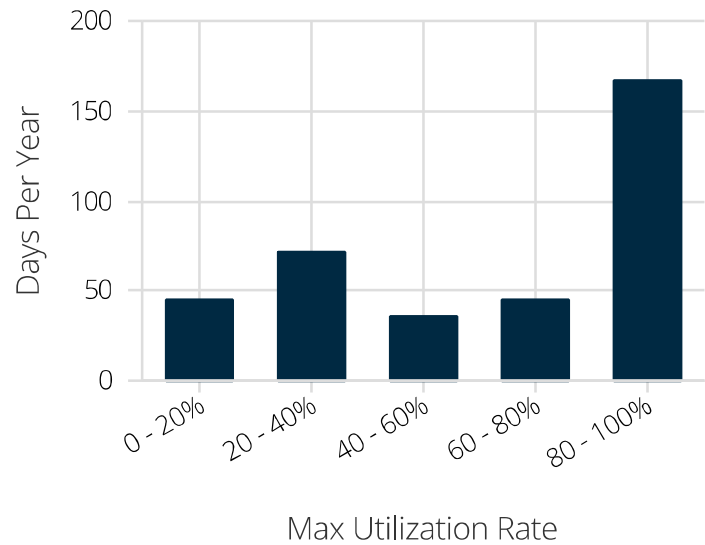
## ESS Equipment Typical Lifespan

Battery Banks: 15 Years  
Inverters: 15 Years

## ESS Cost and Incentives

ESS Cost \$925,000  
ESS Incentive **-\$350,000**  
**Net ESS Cost \$575,000**

## Energy Storage Annual Utilization



| Energy Output and Demand Savings From Solar PV and Energy Storage |                            |                           |                      |
|---|----------------------------|---------------------------|----------------------|
| Date Range  | ESS Energy Discharge (kWh) | Solar PV Generation (kWh) | Total Demand Savings |
| 1/1/2019 - 2/1/2019   | 25,898                     | 0                         | \$2,925              |
| 2/1/2019 - 3/1/2019   | 23,539                     | 0                         | \$2,925              |
| 3/1/2019 - 4/1/2019   | 18,271                     | 0                         | \$2,925              |
| 4/1/2019 - 5/1/2019   | 23,942                     | 0                         | \$2,925              |
| 5/1/2019 - 6/1/2019   | 14,145                     | 0                         | \$2,925              |
| 6/1/2019 - 7/1/2019   | 24,908                     | 0                         | \$4,999              |
| 7/1/2019 - 8/1/2019   | 29,054                     | 0                         | \$3,529              |
| 8/1/2019 - 9/1/2019   | 27,382                     | 0                         | \$4,741              |
| 9/1/2019 - 10/1/2019  | 24,037                     | 0                         | \$4,535              |
| 10/1/2019 - 11/1/2019   | 26,831                     | 0                         | \$2,925              |
| 11/1/2019 - 12/1/2019   | 17,813                     | 0                         | \$5,433              |
| 12/1/2019 - 1/1/2020  | 9,910                      | 0                         | \$5,433              |
| <b>Total</b>  | <b>265,730</b>             | <b>0</b>                  | <b>\$46,221</b>      |

## 2.1.2 Rebates and Incentives

This section summarizes all incentives available for this project. The actual rebate and incentive amounts for this project are shown in each example.

### **NY SUN - Solar Plus Storage**

Eligible projects will receive a \$350/kWh of installed energy storage capacity based upon the usable energy in alternating current (AC) of the system. NYSERDA requires the energy storage system to remain operational and permanently installed with the NY-Sun solar project. There are several requirements in place, including a minimum round trip efficiency of 70%, a minimum capacity of 100 kWh, and that the capacity (kWh) eligible for incentive is limited to four times the rating (kW) of the associated inverter.

Total Incentive Value: \$350,000

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## 2.1.3 Utility Rates

The table below shows the rates associated with your current utility rate schedule (GPD). Your estimated electric bills after solar are shown on the following page.

| Customer Charges |                       |                    |            | Energy Charges |             |           |           | Demand Charges |             |           |         |
|------------------|-----------------------|--------------------|------------|----------------|-------------|-----------|-----------|----------------|-------------|-----------|---------|
| Season           | Charge Type           | Rate Type          | GPD        | Season         | Charge Type | Rate Type | GPD       | Season         | Charge Type | Rate Type | GPD     |
| W                | Flat Rate             | per billing period | \$200.00   | W              | Flat Rate   | Import    | \$0.00277 | W              | Flat Rate   | Import    | \$4.61  |
| S                | Flat Rate             | per billing period | \$200.00   | S              | Flat Rate   | Import    | \$0.00277 | S              | Flat Rate   | Import    | \$4.61  |
| W                | kW: T < 5000          | per billing period | \$23.69    | W              | On Peak     | Import    | \$0.03076 | W              | On Peak     | Import    | \$23.57 |
| W                | kW: 5000 < T < 10000  | per billing period | \$75.78    | W              | Off Peak    | Import    | \$0.02845 | S              | On Peak     | Import    | \$25.78 |
| W                | kW: 10000 < T < 30000 | per billing period | \$326.04   | S              | On Peak     | Import    | \$0.03815 |                |             |           |         |
| W                | kW: 30000 < T < 50000 | per billing period | \$679.01   | S              | Off Peak    | Import    | \$0.02431 |                |             |           |         |
| W                | kW: 50000 < T         | per billing period | \$1,366.48 |                |             |           |           |                |             |           |         |
| S                | kW: T < 5000          | per billing period | \$23.69    |                |             |           |           |                |             |           |         |
| S                | kW: 5000 < T < 10000  | per billing period | \$75.78    |                |             |           |           |                |             |           |         |
| S                | kW: 10000 < T < 30000 | per billing period | \$326.04   |                |             |           |           |                |             |           |         |
| S                | kW: 30000 < T < 50000 | per billing period | \$679.01   |                |             |           |           |                |             |           |         |
| S                | kW: 50000 < T         | per billing period | \$1,366.48 |                |             |           |           |                |             |           |         |

## 2.1.4 Current Electric Bill

The table below shows your annual electricity costs based on the most current utility rates and your previous 12 months of electrical usage.

### Rate Schedule: CE-MI - GPD

| Time Periods            | Energy Use (kWh) |                  | Max Demand (kW) |          | Charges         |                  |                  |                  |
|-------------------------|------------------|------------------|-----------------|----------|-----------------|------------------|------------------|------------------|
|                         | On Peak          | Off Peak         | NC / Max        | On Peak  | Other           | Energy           | Demand           | Total            |
| 1/1/2019 - 2/1/2019 W   | 262,240          | 395,360          | 1,461           | 1,460    | \$1,566         | \$21,136         | \$46,880         | \$69,582         |
| 2/1/2019 - 3/1/2019 W   | 219,458          | 327,742          | 1,460           | 1,460    | \$1,566         | \$17,590         | \$46,880         | \$66,037         |
| 3/1/2019 - 4/1/2019 W   | 205,253          | 279,547          | 1,460           | 1,460    | \$1,566         | \$15,609         | \$46,880         | \$64,056         |
| 4/1/2019 - 5/1/2019 W   | 243,633          | 368,367          | 1,460           | 1,460    | \$1,566         | \$19,669         | \$46,880         | \$68,116         |
| 5/1/2019 - 6/1/2019 W   | 191,268          | 295,932          | 1,460           | 1,460    | \$1,566         | \$15,652         | \$46,880         | \$64,098         |
| 6/1/2019 - 7/1/2019 S   | 257,972          | 339,628          | 1,857           | 1,857    | \$1,566         | \$19,752         | \$59,398         | \$80,717         |
| 7/1/2019 - 8/1/2019 S   | 367,785          | 465,015          | 2,000           | 2,000    | \$1,566         | \$27,641         | \$63,085         | \$92,292         |
| 8/1/2019 - 9/1/2019 S   | 398,126          | 465,874          | 2,500           | 2,500    | \$1,566         | \$28,905         | \$75,975         | \$106,447        |
| 9/1/2019 - 10/1/2019 S  | 340,688          | 434,512          | 2,200           | 2,200    | \$1,566         | \$25,706         | \$68,241         | \$95,513         |
| 10/1/2019 - 11/1/2019 W | 245,118          | 388,482          | 1,444           | 1,444    | \$1,566         | \$20,347         | \$46,880         | \$68,793         |
| 11/1/2019 - 12/1/2019 W | 306,543          | 449,457          | 2,000           | 2,000    | \$1,566         | \$24,310         | \$58,665         | \$84,541         |
| 12/1/2019 - 1/1/2020 W  | 306,543          | 449,457          | 2,000           | 2,000    | \$1,566         | \$24,310         | \$58,665         | \$84,541         |
| <b>Total</b>            | <b>3,344,627</b> | <b>4,659,373</b> | <b>-</b>        | <b>-</b> | <b>\$18,798</b> | <b>\$260,627</b> | <b>\$665,309</b> | <b>\$944,734</b> |

## 2.1.5 New Electric Bill

### Rate Schedule: CE-MI - GPD

| Time Periods            | Energy Use (kWh) |                  | Max Demand (kW) |          | Charges         |                  |                  |                  |
|-------------------------|------------------|------------------|-----------------|----------|-----------------|------------------|------------------|------------------|
|                         | On Peak          | Off Peak         | NC / Max        | On Peak  | Other           | Energy           | Demand           | Total            |
| 1/1/2019 - 2/1/2019 W   | 239,036          | 423,264          | 1,327           | 1,325    | \$1,566         | \$21,229         | \$43,955         | \$66,750         |
| 2/1/2019 - 3/1/2019 W   | 199,289          | 352,183          | 1,282           | 1,281    | \$1,566         | \$17,677         | \$43,955         | \$63,198         |
| 3/1/2019 - 4/1/2019 W   | 193,231          | 294,884          | 1,260           | 1,260    | \$1,566         | \$15,685         | \$43,955         | \$61,206         |
| 4/1/2019 - 5/1/2019 W   | 223,818          | 392,527          | 1,327           | 1,326    | \$1,566         | \$19,759         | \$43,955         | \$65,280         |
| 5/1/2019 - 6/1/2019 W   | 187,378          | 302,389          | 1,260           | 1,260    | \$1,566         | \$15,723         | \$43,955         | \$61,244         |
| 6/1/2019 - 7/1/2019 S   | 234,972          | 367,148          | 1,693           | 1,691    | \$1,566         | \$19,556         | \$54,400         | \$75,522         |
| 7/1/2019 - 8/1/2019 S   | 341,827          | 496,246          | 1,892           | 1,891    | \$1,566         | \$27,424         | \$59,556         | \$88,546         |
| 8/1/2019 - 9/1/2019 S   | 372,826          | 496,143          | 2,344           | 2,344    | \$1,566         | \$28,690         | \$71,234         | \$101,490        |
| 9/1/2019 - 10/1/2019 S  | 317,772          | 461,790          | 2,078           | 2,052    | \$1,566         | \$25,507         | \$63,706         | \$90,780         |
| 10/1/2019 - 11/1/2019 W | 224,077          | 414,392          | 1,350           | 1,265    | \$1,566         | \$20,450         | \$43,955         | \$65,972         |
| 11/1/2019 - 12/1/2019 W | 291,378          | 467,855          | 1,800           | 1,800    | \$1,566         | \$24,376         | \$53,232         | \$79,174         |
| 12/1/2019 - 1/1/2020 W  | 299,755          | 458,043          | 1,800           | 1,800    | \$1,566         | \$24,350         | \$53,232         | \$79,149         |
| <b>Total</b>            | <b>3,125,359</b> | <b>4,926,864</b> | <b>-</b>        | <b>-</b> | <b>\$18,798</b> | <b>\$260,426</b> | <b>\$619,088</b> | <b>\$898,312</b> |

**Annual Electricity Savings: \$46,422**

# 3.1 Cash Purchase

## Assumptions and Key Financial Metrics

|                             |           |                         |           |                       |            |
|-----------------------------|-----------|-------------------------|-----------|-----------------------|------------|
| IRR - Term                  | 8.7%      | Net Present Value       | \$307,378 | Payback Period        | 11.9 Years |
| ROI                         | 226.1%    | PV Degradation Rate     | 0.00%     | Discount Rate         | 5.0%       |
| Energy Cost Escalation Rate | 3.0%      | Federal Income Tax Rate | 30.0%     | State Income Tax Rate | 8.0%       |
| Total Project Costs         | \$925,000 |                         |           |                       |            |

| Years   | Project Costs | ESS Incentive | Electric Bill Savings | Total Cash Flow | Cumulative Cash Flow |
|---------|---------------|---------------|-----------------------|-----------------|----------------------|
| Upfront | -\$925,000    | \$350,000     | -                     | -\$575,000      | -\$575,000           |
| 1       | -             | -             | \$46,422              | \$46,422        | -\$528,578           |
| 2       | -             | -             | \$46,858              | \$46,858        | -\$481,720           |
| 3       | -             | -             | \$47,279              | \$47,279        | -\$434,441           |
| 4       | -             | -             | \$47,683              | \$47,683        | -\$386,758           |
| 5       | -             | -             | \$48,068              | \$48,068        | -\$338,689           |
| 6       | -             | -             | \$48,434              | \$48,434        | -\$290,255           |
| 7       | -             | -             | \$48,779              | \$48,779        | -\$241,476           |
| 8       | -             | -             | \$49,100              | \$49,100        | -\$192,376           |
| 9       | -             | -             | \$49,397              | \$49,397        | -\$142,979           |
| 10      | -             | -             | \$49,668              | \$49,668        | -\$93,312            |
| 11      | -             | -             | \$49,910              | \$49,910        | -\$43,402            |
| 12      | -             | -             | \$50,122              | \$50,122        | \$6,720              |
| 13      | -             | -             | \$50,302              | \$50,302        | \$57,022             |
| 14      | -             | -             | \$50,447              | \$50,447        | \$107,469            |
| 15      | -             | -             | \$50,557              | \$50,557        | \$158,026            |
| 16      | -             | -             | \$72,324              | \$72,324        | \$230,350            |
| 17      | -             | -             | \$73,004              | \$73,004        | \$303,354            |
| 18      | -             | -             | \$73,659              | \$73,659        | \$377,013            |
| 19      | -             | -             | \$74,288              | \$74,288        | \$451,302            |
| 20      | -             | -             | \$74,889              | \$74,889        | \$526,191            |
| 21      | -             | -             | \$75,459              | \$75,459        | \$601,650            |
| 22      | -             | -             | \$75,996              | \$75,996        | \$677,645            |
| 23      | -             | -             | \$76,496              | \$76,496        | \$754,142            |
| 24      | -             | -             | \$76,959              | \$76,959        | \$831,100            |
| 25      | -             | -             | \$77,380              | \$77,380        | \$908,481            |
| 26      | -             | -             | \$77,758              | \$77,758        | \$986,239            |
| 27      | -             | -             | \$78,088              | \$78,088        | \$1,064,327          |
| 28      | -             | -             | \$78,369              | \$78,369        | \$1,142,696          |
| 29      | -             | -             | \$78,595              | \$78,595        | \$1,221,291          |
| 30      | -             | -             | \$78,765              | \$78,765        | \$1,300,057          |
| Totals: | -\$925,000    | \$350,000     | \$1,875,057           | \$1,300,057     | -                    |

# 4.1 Cash Purchase

## Assumptions and Key Financial Metrics

|                             | IRR - Term                  | 8.7%       | Net Present Value       | \$307,378  | Payback Period        | 11.9 Years |            |            |            |            |           |           |          |
|-----------------------------|-----------------------------|------------|-------------------------|------------|-----------------------|------------|------------|------------|------------|------------|-----------|-----------|----------|
|                             | ROI                         | 226.1%     | PV Degradation Rate     | 0.00%      | Discount Rate         | 5.0%       |            |            |            |            |           |           |          |
|                             | Energy Cost Escalation Rate | 3.0%       | Federal Income Tax Rate | 30.0%      | State Income Tax Rate | 8.0%       |            |            |            |            |           |           |          |
|                             | Total Project Costs         | \$925,000  |                         |            |                       |            |            |            |            |            |           |           |          |
| Years                       | Upfront                     | 1          | 2                       | 3          | 4                     | 5          | 6          | 7          | 8          | 9          | 10        | 11        | 12       |
| <b>Cash</b>                 |                             |            |                         |            |                       |            |            |            |            |            |           |           |          |
| Project Costs               | -\$925,000                  | -          | -                       | -          | -                     | -          | -          | -          | -          | -          | -         | -         | -        |
| ESS Incentive               | \$350,000                   | -          | -                       | -          | -                     | -          | -          | -          | -          | -          | -         | -         | -        |
| Electric Bill Savings       | -                           | \$46,422   | \$46,858                | \$47,279   | \$47,683              | \$48,068   | \$48,434   | \$48,779   | \$49,100   | \$49,397   | \$49,668  | \$49,910  | \$50,122 |
| <b>Cash Total</b>           |                             | \$46,422   | \$46,858                | \$47,279   | \$47,683              | \$48,068   | \$48,434   | \$48,779   | \$49,100   | \$49,397   | \$49,668  | \$49,910  | \$50,122 |
| <b>Total Cash Flow</b>      | -\$575,000                  | \$46,422   | \$46,858                | \$47,279   | \$47,683              | \$48,068   | \$48,434   | \$48,779   | \$49,100   | \$49,397   | \$49,668  | \$49,910  | \$50,122 |
| <b>Cumulative Cash Flow</b> | -\$575,000                  | -\$528,578 | -\$481,720              | -\$434,441 | -\$386,758            | -\$338,689 | -\$290,255 | -\$241,476 | -\$192,376 | -\$142,979 | -\$93,312 | -\$43,402 | \$6,720  |

# 4.1 Cash Purchase

## Assumptions and Key Financial Metrics

|                             | 13        | 14        | 15        | 16        | 17                      | 18        | 19        | 20        | 21        | 22                    | 23        | 24        | 25         |
|-----------------------------|-----------|-----------|-----------|-----------|-------------------------|-----------|-----------|-----------|-----------|-----------------------|-----------|-----------|------------|
| IRR - Term                  |           |           | 8.7%      |           | Net Present Value       |           |           | \$307,378 |           | Payback Period        |           |           | 11.9 Years |
| ROI                         |           |           | 226.1%    |           | PV Degradation Rate     |           |           | 0.00%     |           | Discount Rate         |           |           | 5.0%       |
| Energy Cost Escalation Rate |           |           | 3.0%      |           | Federal Income Tax Rate |           |           | 30.0%     |           | State Income Tax Rate |           |           | 8.0%       |
| Total Project Costs         |           |           | \$925,000 |           |                         |           |           |           |           |                       |           |           |            |
| <b>Years</b>                | <b>13</b> | <b>14</b> | <b>15</b> | <b>16</b> | <b>17</b>               | <b>18</b> | <b>19</b> | <b>20</b> | <b>21</b> | <b>22</b>             | <b>23</b> | <b>24</b> | <b>25</b>  |
| <b>Cash</b>                 |           |           |           |           |                         |           |           |           |           |                       |           |           |            |
| Project Costs               | -         | -         | -         | -         | -                       | -         | -         | -         | -         | -                     | -         | -         | -          |
| ESS Incentive               | -         | -         | -         | -         | -                       | -         | -         | -         | -         | -                     | -         | -         | -          |
| Electric Bill Savings       | \$50,302  | \$50,447  | \$50,557  | \$72,324  | \$73,004                | \$73,659  | \$74,288  | \$74,889  | \$75,459  | \$75,996              | \$76,496  | \$76,959  | \$77,380   |
| <b>Cash Total</b>           | \$50,302  | \$50,447  | \$50,557  | \$72,324  | \$73,004                | \$73,659  | \$74,288  | \$74,889  | \$75,459  | \$75,996              | \$76,496  | \$76,959  | \$77,380   |
| <b>Total Cash Flow</b>      | \$50,302  | \$50,447  | \$50,557  | \$72,324  | \$73,004                | \$73,659  | \$74,288  | \$74,889  | \$75,459  | \$75,996              | \$76,496  | \$76,959  | \$77,380   |
| <b>Cumulative Cash Flow</b> | \$57,022  | \$107,469 | \$158,026 | \$230,350 | \$303,354               | \$377,013 | \$451,302 | \$526,191 | \$601,650 | \$677,645             | \$754,142 | \$831,100 | \$908,481  |



# 4.1 Cash Purchase

## Assumptions and Key Financial Metrics

|                             | 8.7%      | Net Present Value       | \$307,378   | Payback Period        | 11.9 Years        |
|-----------------------------|-----------|-------------------------|-------------|-----------------------|-------------------|
| IRR - Term                  |           |                         |             |                       |                   |
| ROI                         | 226.1%    | PV Degradation Rate     | 0.00%       | Discount Rate         | 5.0%              |
| Energy Cost Escalation Rate | 3.0%      | Federal Income Tax Rate | 30.0%       | State Income Tax Rate | 8.0%              |
| Total Project Costs         | \$925,000 |                         |             |                       |                   |
| <b>Years</b>                | <b>26</b> | <b>27</b>               | <b>28</b>   | <b>29</b>             | <b>30</b>         |
| <b>Cash</b>                 |           |                         |             |                       | <b>Totals</b>     |
| Project Costs               | -         | -                       | -           | -                     | <b>-\$925,000</b> |
| ESS Incentive               | -         | -                       | -           | -                     | \$350,000         |
| Electric Bill Savings       | \$77,758  | \$78,088                | \$78,369    | \$78,595              | \$1,875,057       |
| <b>Cash Total</b>           | \$77,758  | \$78,088                | \$78,369    | \$78,595              | \$1,300,057       |
| <b>Total Cash Flow</b>      | \$77,758  | \$78,088                | \$78,369    | \$78,595              | \$1,300,057       |
| <b>Cumulative Cash Flow</b> | \$986,239 | \$1,064,327             | \$1,142,696 | \$1,221,291           | -                 |