



**STANDING SEAM BIPV
RETURN ON INVESTMENT ANALYSIS**

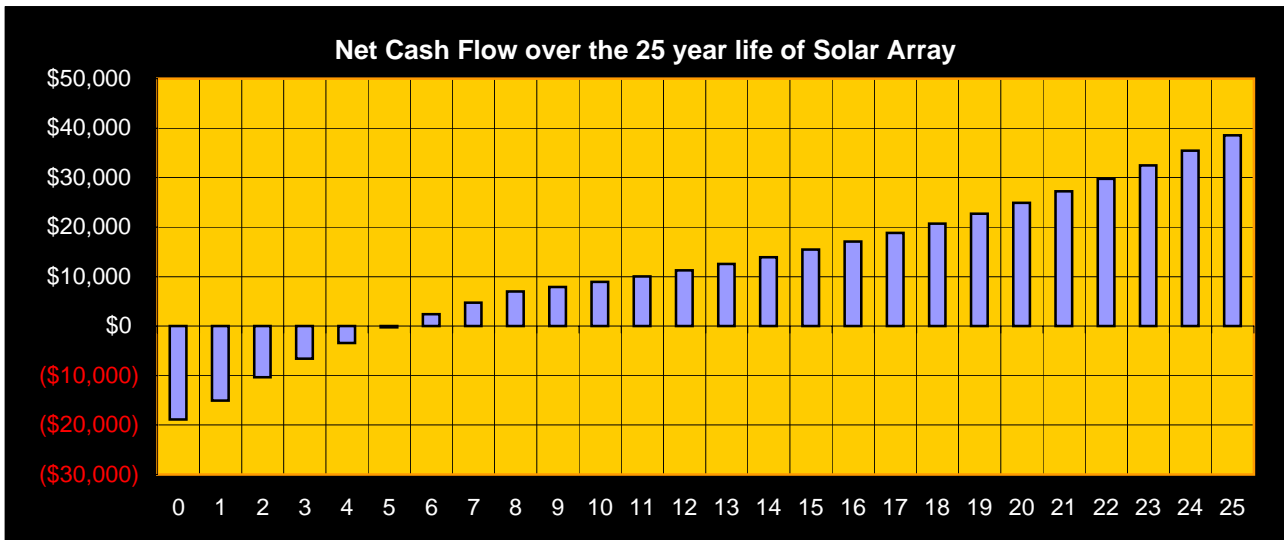
**Olde Town Youth Center
(Commercial)**

Project

ID No:	
System(kW):	3.26
Project Name:	Olde Town Youth Center
Location:	Newark
Date:	20-Aug-10

Results

25 yr. Total Power Output (kWh)	102,090
25 yr. Cash Flow of Electricity (cost of electricity avoided.)	\$38,723
Internal Rate of Return	14.43%
Years of Payback	5.10
Annual CO2 Reduction (Lbs)	6556.3



IMPORTANT NOTES

The customer or user of this report implicitly agrees with the following:

1. The enclosed analysis includes estimates of BIPV power production based on information supplied by the customer and provider. This information drives the best, nationally recognized, time-series BIPV power analyses which are utilized in generating accurate (site-specific and design-specific) 25-year power predictions. All time-series BIPV power analyses are performed with actual and discrete BIPV equipment response factors, resulting in a true "systems driven" power result, via site-specific climate histories. Nevertheless, these estimates do not guarantee a perfect or exact level of power production. Factors such as varying weather conditions (e.g., cloud cover, precipitation, sun spot activity, pollution/haze, etc.) may cause solar irradiance distributions to vary and thus affect power production.
2. All power production calculations are based on the assumption that no physical shading of the BIPV array occurs at any time of the day or year. If it is believed that shading might be a factor, please contact your ROI preparer for revised power production estimates. Dirt accumulation from the environment occurs naturally, and it is recommended that the BIPV array be cleaned at least annually to maintain optimal transmittance and power production.
3. All financial calculations and assumptions should be reviewed by a professional accountant to confirm their applicability to this specific project. Federal or State BIPV incentives are included in this analysis where indicated, based on our understanding of their applicability to this project. Attainment of these incentives is not guaranteed and may be contingent on current status of incentives, individual project conditions and tax status of the owners. The customer must verify eligibility for specific incentives. It is the responsibility of the customer to apply and receive said incentives.
4. The DC to AC Inverter(s), included with the chosen BIPV systems, that are selected in this report are warranted for 10 years standard. The customer may purchase additional warranted years (up to 20) from the inverter manufacturer. The cost of additional warranted years is not included in the net cash flow. The customer understands inverter replacement, after the warranty period, may be necessary.
5. BIPV System Internal Rate of Return and Breakeven Year, shown in the Net Cash Flow graph, are strongly dependent upon the local cost of electricity in the customer's region and from the customer's electric utility company. Internal Rate of Return and Breakeven Year are also dependent upon the expected annual inflation rate of electricity cost from the customer's local utility.
6. Please see Summary of Available Rebates at the end of this ROI Report for a list of pro solar electric utility companies' incentives and any additional incentives that you may be eligible for by switching your electric utility company. Incentives marked with a black on red '1' will appear in the 25 year Net Cash Flow.

Project Specific Notes (if any):

ENVIRONMENTAL BENEFITS ANNUALLY

		POLLUTANTS AVOIDED via SOLAR GENERATED ELECTRICITY (Annually)				
	Fossil Fuel Atmospheric Pollutant	Coal* based energy (lbs)	Gas based energy (lbs)	Oil based energy (lbs)	# of Pine Trees - sequestering	# of SUV miles <u>not</u> Driven
CO2	Is a non-toxic gas, however a strong heat-retaining greenhouse gas.	7,931.0	5,076.0	6,662.0	468	4,176
NOx Gases	Created when nitrogen is burned as part of the combustion process, one of the main causes of ozone (smog), also associated with acid rain.	23.0	4.5	5.0		
PM10	Particulate matter smaller than 10 microns - associated with lung ailments.	0.8	0.2	0.2		
SO2	Associated with visible pollution (haze) and acid rain.	13.8	0.0	4.0		
VOC	Volatile Organic Compounds One of the primary causes of ozone (smog), also some of the individual compounds are toxic.	0.5	0.4	0.2		

**average of eastern and western coal*

http://www.infinitepower.oeg/calc_electric.htm

SUMMARY OF ROI REQUEST

Name:	John Van Den Elzen
Company	ATAS International, Inc.
E-mail Contact:	jvandelzen@atas.com
Phone Contact:	610-395-8445

Project Name:	Olde Town Youth Center
ID No:	
Date:	8/20/2010
Property Type:	Commercial
State:	NEW JERSEY
County:	Essex
City:	Newark
Identify Closest City monitored by NREL:	Newark
Utility Company:	

Length of Roof (L)	10	ft
Width of Roof (W)	96	ft
Total Roof Area	960	sq ft
Select Module type for the standing seam roof being used	FLM165 - 16 1/2 inch	
Roof Area Facing South / SouthEast / SouthWest	960	sq ft
Tilt Angle of the roof	37	degrees relative to horizontal
Azimuth angle between the roof orientation and true North	0	degrees relative to true North

Total No. of PVL-68 Modules Required	48
Roof Area covered (sq ft) by PVL-68 Modules	687.5

PV Modules Selected

Rated Power (DC)	Quantity of System	Rated Power (kW - DC)	Min. Sq Ft of Roof Occupied by PV System
1.5 kW			
2 kW			
2.5 kW			
3 kW	1	3.26	687.5
4 kW			
5 kW			
10 kW			
15 kW			
30 kW			
60 kW			
120 kW			
TOTAL	1	3.26	687.5

	Data comes from EnergyPeak
	Data completed by project owner

Financials

Average Annual Cost of Electricity in chosen state	\$ 0.1322	\$/kWh
Estimated Inflation of Electricity Costs (annually)	8.00%	
25 Year Cash Flow (accounting for electricity cost inflation)	\$38,723	(straight sum)
Capital Cost of PV System	\$27,000	

**includes UNISOLAR PV modules; DC-to-AC Inverter; Balance-of-System (BOS) components (combiner boxes, AC and DC disconnects, wire, conduit); Application Labor (to adhere PV laminates to standing seam panels); electrical labor; Misc. (design, freight, insurance, etc.)*

Tax Rate that applies to owner of property	
*Federal Tax Credit	30%
Federal Tax Basis	34%
Bonus Depreciation Value	0%
State Tax Rate	6%

ANNUAL OUTPUT & CASH FLOW FOR 25 YEARS

Year	Annual Output	Cash Flow
1	4333.95	\$572.95
2	4312.28	\$615.69
3	4290.72	\$661.62
4	4269.27	\$710.98
5	4247.92	\$764.02
6	4226.68	\$821.01
7	4205.55	\$882.26
8	4184.52	\$948.08
9	4163.60	\$1,018.81
10	4142.78	\$1,094.81
11	4122.06	\$1,176.48
12	4101.45	\$1,264.25
13	4080.95	\$1,358.56
14	4060.54	\$1,459.91
15	4040.24	\$1,568.82
16	4020.04	\$1,685.85
17	3999.94	\$1,811.62
18	3979.94	\$1,946.76
19	3960.04	\$2,091.99
20	3940.24	\$2,248.05
21	3920.54	\$2,415.76
22	3900.93	\$2,595.97
23	3881.43	\$2,789.63
24	3862.02	\$2,997.74
25	3842.71	\$3,221.37

25 YEAR CASH FLOW (AFTER TAX DOLLARS)

	Years	0	1	2	3	4	5	6	7	8	9	10
DEPRECIATION CALCULATIONS												
Capital Costs	(1)	\$27,000										
Federal Investment Credit Tax Incentive (30%)		\$8,100										
MACRS Depreciation Credit Calculation												
System Cost (From Above)		\$27,000										
Basis Reduction (50% of Fed Tax Credit)	(2)	\$4,050										
Net Federal Depreciable Basis		\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950
Bonus Depreciation Value (Currently 0%)		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Available Depreciable Basis		\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950
MACRS Depreciation Value		\$0	\$4,590	\$7,344	\$4,406	\$2,644	\$2,644	\$1,322	\$0	\$0	\$0	\$0
Federal Tax Credit Savings (34%)		\$0	\$1,561	\$2,497	\$1,498	\$899	\$899	\$449	\$0	\$0	\$0	\$0
Capital Cost		(\$27,000)	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal Incentives												
Federal tax Credit		\$8,100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal MACRS depreciation credit		\$0	\$1,561	\$2,497	\$1,498	\$899	\$899	\$449	\$0	\$0	\$0	\$0
State/Local/Utility Incentives												
One Time Cash Rebate / REC		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Annual Performance Based Rebates / REC		\$0	\$2,947	\$2,846	\$2,746	\$2,690	\$2,591	\$2,494	\$2,439	\$2,301	\$0	\$0
Federal+State Tax on State/Local Incentives		\$0	\$1,179	\$1,138	\$1,098	\$1,076	\$1,036	\$997	\$976	\$921	\$0	\$0
State Tax Incentives												
State Tax Incentives		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Federal Tax on State Tax Incentive		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Energy Cost Savings from PV Installation	(3)	\$0	\$573	\$616	\$662	\$711	\$764	\$821	\$882	\$948	\$1,019	\$1,095
Maintenance Costs*		\$0	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)
* Assumption: 0.25% of installed cost yearly												
NET IMPACT		(\$18,900)	\$3,834	\$4,753	\$3,740	\$3,156	\$3,150	\$2,699	\$2,278	\$2,261	\$951	\$1,027
CUMULATIVE NET IMPACT		(\$18,900)	(\$15,066)	(\$10,313)	(\$6,573)	(\$3,417)	(\$267)	\$2,433	\$4,711	\$6,972	\$7,924	\$8,951

ANALYSIS OF INVESTMENT PERFORMANCE

BREAKEVEN YEAR	5.10
INTERNAL RATE OF RETURN (IRR)	14.43%

Notes

- (1) Based on specified systems set out in Appendix A.
- (2) Based on 50% of Federal Tax Credit.
- (3) Estimated escalating at 8% per annum.

\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950	\$22,950
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
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\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

\$1,176	\$1,264	\$1,359	\$1,460	\$1,569	\$1,686	\$1,812	\$1,947	\$2,092	\$2,248	\$2,416	\$2,596	\$2,790	\$2,998	\$3,221
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(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)	(\$68)
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\$1,109	\$1,197	\$1,291	\$1,392	\$1,501	\$1,618	\$1,744	\$1,879	\$2,024	\$2,181	\$2,348	\$2,528	\$2,722	\$2,930	\$3,154
\$10,060	\$11,257	\$12,548	\$13,940	\$15,441	\$17,060	\$18,804	\$20,683	\$22,708	\$24,888	\$27,237	\$29,765	\$32,487	\$35,417	\$38,571

SUMMARY OF AVAILABLE REBATES

Please place "1" on the rebate that is of interest. Multiple rebates may be chosen by placing "1" on top of the chosen one.

STATE	NEW JERSEY			
User Selection	0	1	0	0
Property_Type	Commercial	Commercial		
Rebate Name	New Jersey Customer-Sited Renewable Energy Rebates	Solar Renewable Energy Certificates (SREC's)		
Value (\$/W)	\$0.75	\$0.00	\$0.00	\$0.00
State Tax Credit	\$0.00	\$0.00	\$0.00	\$0.00
2010	\$0.00	\$0.68	\$0.00	\$0.00
2011	\$0.00	\$0.66	\$0.00	\$0.00
2012	\$0.00	\$0.64	\$0.00	\$0.00
2013	\$0.00	\$0.63	\$0.00	\$0.00
2014	\$0.00	\$0.61	\$0.00	\$0.00
2015	\$0.00	\$0.59	\$0.00	\$0.00
2016	\$0.00	\$0.58	\$0.00	\$0.00
2017	\$0.00	\$0.55	\$0.00	\$0.00
2018	\$0.00	\$0.00	\$0.00	\$0.00
2019	\$0.00	\$0.00	\$0.00	\$0.00
2020	\$0.00	\$0.00	\$0.00	\$0.00
2021	\$0.00	\$0.00	\$0.00	\$0.00
2022	\$0.00	\$0.00	\$0.00	\$0.00
2023	\$0.00	\$0.00	\$0.00	\$0.00
2024	\$0.00	\$0.00	\$0.00	\$0.00
2025	\$0.00	\$0.00	\$0.00	\$0.00
2026	\$0.00	\$0.00	\$0.00	\$0.00
2027	\$0.00	\$0.00	\$0.00	\$0.00
2028	\$0.00	\$0.00	\$0.00	\$0.00
2029	\$0.00	\$0.00	\$0.00	\$0.00
2030	\$0.00	\$0.00	\$0.00	\$0.00
2031	\$0.00	\$0.00	\$0.00	\$0.00
2032	\$0.00	\$0.00	\$0.00	\$0.00
2033	\$0.00	\$0.00	\$0.00	\$0.00
2034	\$0.00	\$0.00	\$0.00	\$0.00
Limit on Max Incentive Value (\$)				
Minimum System Size (kW)	0	0		
Maximum eligible system size (kW)	30	0		
OTHER COMPLEXITIES	0	0		
DATA LINK (www.dsireusa.org)	http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NJ04F&re=1&ee=1	http://www.dsireusa.org/incentives/incentive.cfm?Incentive_Code=NJ07F&re=1&ee=1		
INCENTIVE TYPE	State Rebate Program	Production		
NOTE	Restarts September 1, 2010			