

Avery Hill Solar

February 15, 2019



Lakes Region Community Developers

To create opportunities for the Lakes Region to thrive by developing healthy homes, creating vibrant community assets, and engaging residents.

- Since 1988, we have developed high-quality, affordable rental housing throughout the Lakes Region.
- We currently own and operate a \$53 million real estate portfolio comprising 365 affordable apartments in Ashland, Gilford, Laconia, Meredith, Tilton, and Wolfeboro.
- We also develop real estate that responds to local community needs including affordable, single-family homes for sale, mixed-income multi-family rental properties, and community facilities.



Green Commitment

LRCO works to promote sustainable business practices by identifying and sharing innovative methods, establishing policy, and encouraging staff and residents to incorporate green practices into their offices, homes, and communities.

- NeighborWorks® America Green Organization
- LRCO is committed to environmental sustainability and has incorporated green practices across all lines of business.



Solar Feasibility Study

- Received a grant from the Haas Foundation through NHCLF for a solar study.
- Contracted with ReVision Energy to evaluate the entire LRCD portfolio.
- Determined applicable buildings based on orientation, roof pitch, penetrations, and adjacent vegetation.
- 6 of the 7 Avery Hill buildings were found to be the best opportunity to make a cost effective investment.
- Received a second grant from the Haas Foundation to be used towards installation; conditional upon project feasibility.



Avery Hill Neighborhood LP

- In 1994, Laconia residents asked for help in redeveloping the Avery Hill neighborhood.
- Buildings were either demolished and rebuilt or completely renovated.
- Comprised of 7 buildings/14 units, green space, & playground.
- Income limits:
 - 8 units <50% AMI
 - 6 units <60% AMI
- Development funding: LIHTC, HOME, CDBG, & FHLB AHP



Avery Hill Residents

Lakes Region Community Developers

Avery Hill Solar

LMI Participants

Unit #	Relationship	Age	Gender	Race/Ethnicity	Marital	Handicap/Disabled	Student	Employer	Wages	Notes
11A Lougee	Head of household	53	Female	White	Divorced	No	No	SAU#51 Pittsfield	\$46,935	
11A Lougee	Dependent	14	Male	White	N/A	No	Full time	N/A	N/A	
11A Lougee	Dependent	12	Female	White	N/A	No	Full time	N/A	N/A	
11B Lougee	Head of household	56	Male	Other	Married	No	No	T-Bones	\$76,362	Total for household
11B Lougee	Spouse	52	Female	Other	Married	No	No	Homemaker	N/A	
11B Lougee	Other	31	Male	Other	Married	No	No	LRGH	N/A	
11B Lougee	Other	29	Female	Other	Married	No	No	Steele Hill Resort	N/A	
11B Lougee	Dependent	4	Male	Other	N/A	No	No	N/A	N/A	
11B Lougee	Dependent	1	Male	Other	N/A	No	No	N/A	N/A	
20 Grove	Head of household	29	Female	White	Single	No	Part time	SSI	\$9,132	
20 Grove	Dependent	12	Male	White	N/A	No	Full time	N/A	N/A	
20 Grove	Dependent	10	Male	White	N/A	No	Full time	N/A	N/A	
20 Grove	Dependent	3	Female	White	N/A	No	No	N/A	N/A	
20 Grove	Dependent	2	Male	Black/African American	N/A	No	No	N/A	N/A	
22 Grove	Head of household	54	Female	White	Divorced	No	No	SSI	\$9,144	
28 Grove	Head of household	24	Female	White	Single	No	Part time	Shaw's	N/A	
28 Grove	Adult Co-Tenant	29	Male	White	Single	No	No	Freudenberg	\$26,000	Total for household
28 Grove	Dependent	3	Male	White	N/A	No	No	N/A	N/A	
30 Grove	Head of household	27	Female	Other	Single	No	No	Mass Medical Staffing	\$18,720	
30 Grove	Adult Co-Tenant	26	Male	Other	Single	No	No	SSI	\$16,464	
30 Grove	Dependent	9	Male	Other	N/A	No	Full time	N/A	N/A	
30 Grove	Dependent	7	Male	Other	N/A	No	Full time	N/A	N/A	
30 Grove	Dependent	2	Male	Other	N/A	No	No	N/A	N/A	
38A Avery	Head of household	49	Female	White	Legal separation	No	No	SSI	\$28,813	
38A Avery	Dependent	16	Female	White	N/A	No	Full time	N/A	N/A	
38B Avery	Head of household	31	Female	White	Single	No	No	Accellent	\$31,637	
38B Avery	Dependent	5	Male	White	N/A	No	No	N/A	N/A	
5A Lougee	Head of household	60	Female	White	Single	No	No	Accountemps	\$22,880	
5B Lougee	Head of household	51	Female	White	Single	No	No	SSI	\$11,856	
8A Lougee	Head of household	61	Female	White	Widow	Disabled	No	SSI	\$12,354	Handicap unit
8B Lougee	Head of household	36	Female	White	Single	No	No	Madeira USA	\$19,968	
8B Lougee	Dependent	7	Male	White	N/A	No	Full time	N/A	N/A	



Application Process: Predevelopment

- LRCD resident outreach
 - Tenant letters informing them of the project
 - Authorization forms requesting electric usage history
- Eversource electric bills
 - Signed returned forms: 12 months of electric usage and costs
 - Others: 12 months of verbal monthly electrical costs
- ReVision system sizing
 - Roof structural evaluations
 - Determination of system components



Application Process: Calculations

Lakes Region Community Developers
 Avery Hill Solar
 LMI Resident Direct Benefit Analysis

Address	Bedrooms	Current Rent	Electrical Average 3-2017 to 2-2018	Current Rent & Electric	Rent Increase for Additional Debt Servies	Current Rent & Rent Increase	Monthly Savings	Annual Savings	% Savings
28 Grove St	2	\$ 640	\$ 80	\$ 720	\$ 20	\$ 660	\$ 60	\$ 719.42	75%
30 Grove St	2	\$ 715	\$ 78	\$ 793	\$ 20	\$ 735	\$ 58	\$ 693.79	74%
20 Grove St	3	\$ 700	\$ 79	\$ 779	\$ 20	\$ 720	\$ 59	\$ 706.81	75%
22 Grove St	2	\$ 610	\$ 57	\$ 667	\$ 20	\$ 630	\$ 37	\$ 446.41	65%
38A Avery St	3	\$ 715	\$ 90	\$ 805	\$ 20	\$ 735	\$ 70	\$ 835.34	78%
38B Avery St	2	\$ 647	\$ 60	\$ 707	\$ 20	\$ 667	\$ 40	\$ 480.00	67%
11A Lougee Court	3	\$ 740	\$ 85	\$ 825	\$ 20	\$ 760	\$ 65	\$ 780.00	76%
11B Lougee Court	3	\$ 740	\$ 123	\$ 863	\$ 20	\$ 760	\$ 103	\$ 1,236.00	84%
5A Lougee Court	2	\$ 570	\$ 46	\$ 616	\$ 20	\$ 590	\$ 26	\$ 317.66	57%
5B Lougee Court	2	\$ 620	\$ 62	\$ 682	\$ 20	\$ 640	\$ 42	\$ 505.70	68%
8A Lougee Court	3	\$ 715	\$ 50	\$ 765	\$ 20	\$ 735	\$ 30	\$ 360.28	60%
8B Lougee Court	3	\$ 730	\$ 75	\$ 805	\$ 20	\$ 750	\$ 55	\$ 660.00	73%
14 Grove Street*	3	\$ 740	\$ 121	\$ 861	\$ -	\$ 740	\$ -	\$ -	0%
16 Grove Street*	3	\$ 700	\$ 74	\$ 774	\$ -	\$ 700	\$ -	\$ -	0%

NOTE: 14/16 Grove Street is not feasible for solar

AVERAGE	\$ 645.12	71%
1 YEAR	\$ 7,741.41	
10 YEARS	\$ 77,414.10	
40 YEARS	\$ 309,656.40	



Application Process: LMI Benefits

- Census and federal energy data show that energy expenditures by low-income households in the Lakes Region is 34% to 37% of household income.
- Eliminates electric bill for 12 households; stabilizes monthly expenses; LRCD to pay.
- Rent increase of \$20 annually
- 71% average savings
- Annual savings of \$318 to \$1,236



Application Process: Pro Forma

- Funding sources:

- Haas Grant No. 1
- Haas Grant No. 2
- PUC Grant
- NHCDFDA Loan

Sources	Total	per unit	terms	status	% of TDC
Feasibility Study Grant	\$ 11,701	\$ 836		Received	0.04
NHCLF Haas Fund	\$ 75,000	\$ 5,357		Committed	0.27
PUC Grant	\$ 150,000	\$ 10,714		Applied For	0.54
Grants	\$ 236,701	\$ 16,071			0.86
NHCDFDA Loan	\$ 38,000	\$ 2,714	3%, 10 yrs	Letter of Interest	0.14
Loans	\$ 40,000	\$ 2,714			0.15
total sources	\$ 276,701	\$ 18,786			1.00

- Uses:

- Hard costs
- Engineering
- Construction costs
- Finance fees
- Soft costs

Uses	Total	per unit			% of TDC
hard costs	\$ 250,905	\$ 17,922			0.91
A&E	\$ 15,331	\$ 1,095			0.06
interim construction costs	\$ 3,362	\$ 240			0.01
financing fees & expenses	\$ 3,800	\$ 271			0.01
other soft costs	\$ 2,000	\$ 143			0.01
total uses	\$ 275,398	\$ 19,671			1.00
excess (deficit)	\$ 1,303	\$ (886)			



System Installation

- Roof structural upgrades and new shingles
- ReVision contracted to install hardware, wiring
- Hardware installation completed November 2018
- Tenant rent increase effective as of December 1, 2018
- System online as of December 1, 2018



System Installation



System Installation



System Installation



System Installation



Data Monitoring: 11 A & B Lougee Ct

Environmental Benefits



CO2 Emission Saved
4,267.19 lb



Equivalent Trees Planted
107.48

Overview

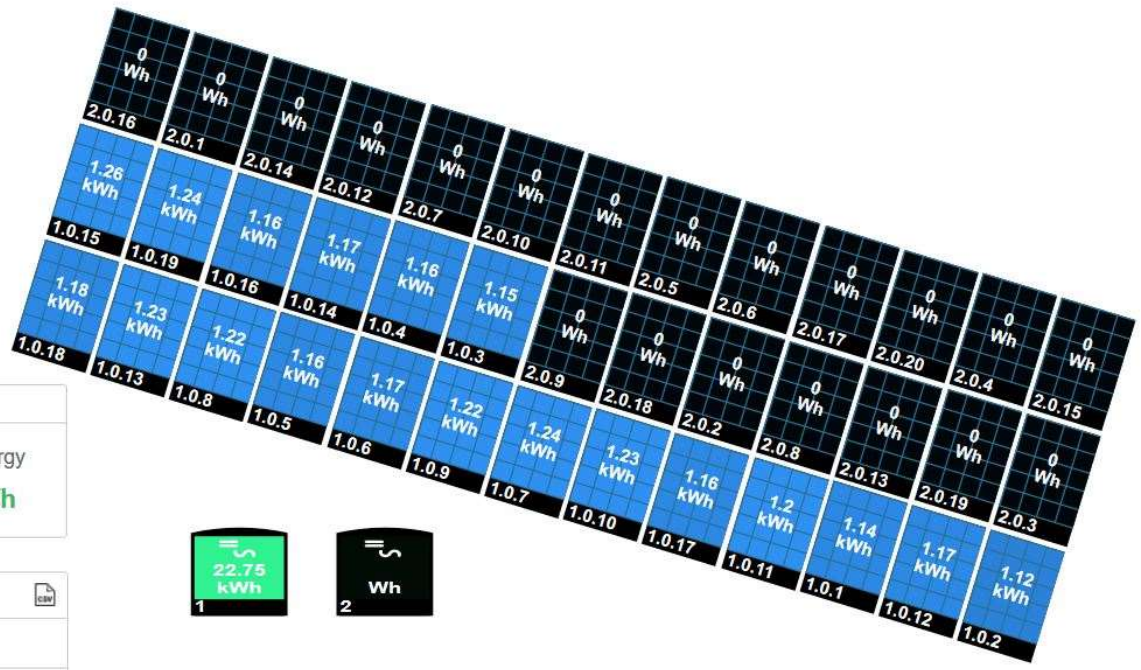
Current Power	Energy today	Energy this month	Lifetime energy
4.98 kW	22.74 kWh	548.08 kWh	2.76 MWh

Power and Energy

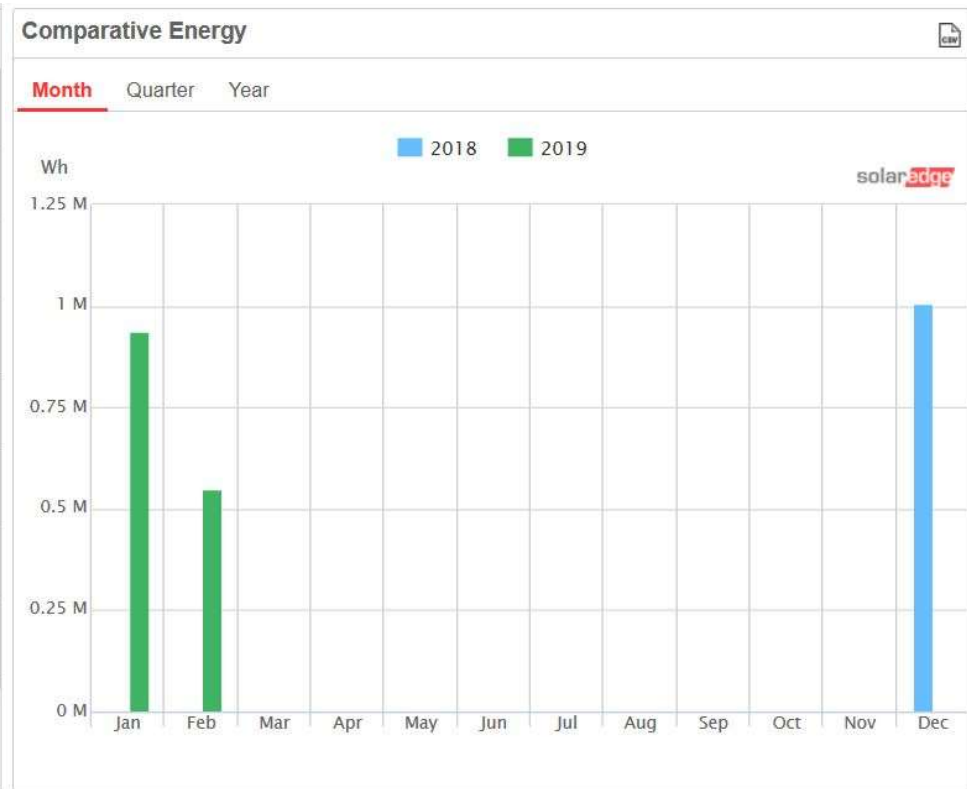
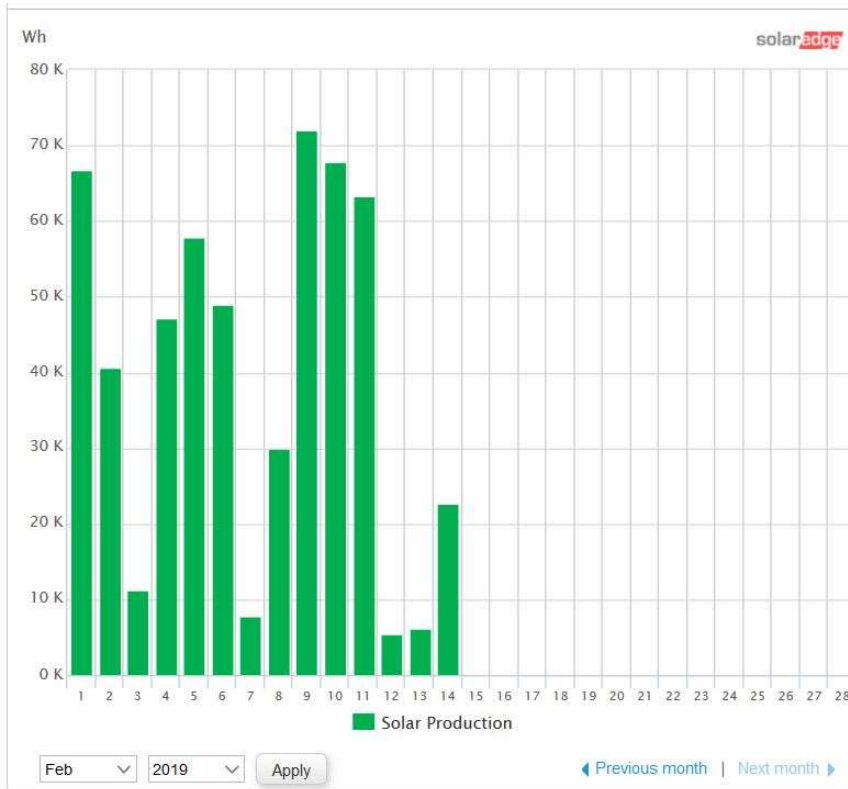
Day Week **Month** Billing Cycle Year

02/01/2019 - 02/28/2019

System Production: **548.08 kWh**



Data Monitoring: 11 A&B Lougee Court



Results: Solar Production

Avery Hill Solar Solar Production

	December (kWh)	January (kWh)
28 Grove St	781	802
30 Grove St		
20 Grove St	803	847
22 Grove St		
38A Avery St	849	861
38B Avery St		
11A Lougee Court	937	1,010
11B Lougee Court		
5A Lougee Court	882	986
5B Lougee Court		
8A Lougee Court	337	388
8B Lougee Court		
System Total	4,589	4,895



Results: December Electric Bills

Avery Hill Solar

Electric Usage: 12-10-2019 to 1-10-2019

	Buy (kWh)	Sell (kWh)	Net (kWh)	LRCO Cost	Presolar Tenant Average Cost
28 Grove St	391	281	110	\$ 40	\$ 80
30 Grove St	425	269	156	\$ 48	\$ 78
20 Grove St	1075	199	876	\$ 177	\$ 79
22 Grove St	290	297	-7	\$ 19	\$ 57
38A Avery St	340	251	89	\$ 35	\$ 90
38B Avery St	383	470	-87	\$ 14	\$ 60
11A Lougee Court	445	507	-62	\$ 20	\$ 85
11B Lougee Court	1098	529	569	\$ 101	\$ 123
5A Lougee Court	VACANT				
5B Lougee Court	938	221	717	\$ 149	\$ 62
8A Lougee Court	265	243	22	\$ 17	\$ 50
8B Lougee Court	279	281	-2	\$ 20	\$ 75
Totals	5,929	3,548	2,381	\$ 641	\$ 839



Next Steps

- Continued monitoring of production and cost savings
- Continued resident education
- Pine Hill Solar
 - Resident outreach
 - Data gathering and calculations
 - System sizing



Questions & Answers

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