

- I. CALL TO ORDER
- II. PLEDGE OF ALLEGIANCE
- III. APPROVAL OF THE MINUTES
 - III.A. June 18, 2015 – Regular
 - III.B. July 17, 2015 – Special
- IV. APPROVAL OF THE AGENDA
- V. CHAIRMAN’S REPORT
- VI. SUPERINTENDENT’S REPORT
- VII. COMMITTEES
 - VII.A. Finance
 - VII.B. Curriculum
 - VII.C. Personnel
 - VII.D. Policy
 - VII.E. Operations
 - VII.F. Field Fees
 - VII.G. Liaison
 - VII.G.1. Board of Finance
 - VII.G.2. Magnet School
 - VII.G.3. Parks and Recreation Committee
 - VII.G.4. Permanent Building Committee
 - VII.G.5. Technology
 - VII.G.6. Safety
 - VII.G.7. Education Connection
- VIII. INFORMATION ITEMS
 - VIII.A. Special Education DMC Update
 - VIII.B. CABE/CAPSS Convention
 - VIII.C. All-Hazards Security and Safety Plan
- IX. PUBLIC PARTICIPATION - The Board welcomes public participation. Pursuant to our Board Policy, public participation is limited to no more than three (3) minutes per speaker and a total of no more than fifteen (15) minutes. People who wish to speak longer are encouraged to attend any and all related
- X. ACTION ITEMS
 - X.A. Personnel Report
 - X.B. 2014-15 FY Budget Transfers
 - X.C. Solar Energy Program at MHHS
 - X.D. Approval of Grant Applications
 - X.D.1. Technology Grant
 - X.D.2. Derx Foundation Grants
 - X.D.2.a. Middle School Breakfast Club
 - X.D.2.b. Middle School Student News
 - X.E. Food Service Management Company Contract Amendments

X.F. Non-tuition Student Request

X.G. Resignation of a New Fairfield Board of Education Member

X.H. Election of Board of Education Officers for Vacant Positions

XI. OTHER

XII. ADJOURNMENT



**NEW FAIRFIELD
BOARD OF EDUCATION**

MEETING HOUSE HILL SCHOOL
SOLAR PROJECT

August 6, 2015



CURRENT STATUS

Technical (Engineering Assessment)

Architectural review complete

Electrical review complete

Structural review complete

ASAP waived \$4,500 fee for assessment for NFPS

Financial

ZRECs secured by ASAP -- \$42.50/MWH

ASAP paid \$4,301 on behalf of NFPS

Modifications

System downsized slightly from 422 kW to 370 kW

Project economics remain outstanding

REVISED LAYOUT



Due to tapered insulation crickets on the roof, shading from HVAC units, and space for inverter placement, system size was scaled down from 422 kW to 370 kW

PROJECT ECONOMICS



SYSTEM DETAILS	
System Size (kW)	370
System life	20 Years
System Production – Year 1 (kWh)	436,149
Current Site Consumption (kWh)	558,600
Current Consumption Offset – Year 1	78.1%

FINANCIAL BENEFITS	PPA (fixed)
"All-in" Utility Rate (\$/kWh)	\$0.161
PPA Rate (\$/kWh)	\$0.123
20-Year Cash Flow	\$906,843
Average Yearly Customer Savings (\$)	\$45,342
Year 1 Cash Surplus/(Deficit)	\$22,104

ENVIRONMENTAL BENEFITS	
Acres of Planted Trees per year	52.8
Gallons of Conserved Gasoline	20,226
Miles not driven in a Passenger Car	483,411
Annual Tons of Avoided CO2	196



The Connecticut Green Bank – a quasi-public state bank that is the first of its kind in the nation – will own and be responsible for the MHHS system.

New Fairfield Public Schools will pay a fixed rate of \$0.123/kWh for electricity for the next 20 years instead of its current \$0.161/kWh (and rising) rate.

The savings amounts to almost \$1 million over the lifetime of the investment -- starting with more than \$20,000 in Year One.



CASH FLOWS

PROJECT SUMMARY	
System Capacity (nameplate kWdc)	370.0
Year One Expected Production (kWh)	436,149
Current Consumption (kWh/Year)	558,600
Current Consumption Offset	78.1%
20 Year Energy Production (kWh)	8,308,647
Projected Total Energy Costs Avoided	\$1,928,807
20 Year Cash Flow	\$906,843

ASSUMPTIONS			
Electricity		Taxes and Financing Rates	
Production Ratio (kWh/kW/Year)	1,180	ITC (one-time)	n.a.
Capacity Derating per year	0.5%	ITC based on Net Cost?	n.a.
Avoided cost ("all in" market price) (\$/kWh)	\$0.161	Tax rate – Fed & State	n.a.
		Inflation	3.0%
Zero Emission Renewable Energy Certificates		Project Specifications	
ZREC (\$/kWh) Years 1 - 5	\$0.04250	Useful Economic Life	20
ZREC (\$/kWh) Years 6 - 10	\$0.04250	Months operational in 2016	12
ZREC (\$/kWh) Years 11 - 15	\$0.04250	Energy & Demand price escalation	0.00%
PPA Price (\$/kWh)	\$0.123		

CASH FLOW SUMMARY											
	20 Year Total	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
PPA Payments	\$ (1,021,964)	\$ (53,646)	\$ (53,378)	\$ (53,110)	\$ (52,842)	\$ (52,573)	\$ (52,305)	\$ (52,037)	\$ (51,769)	\$ (51,501)	\$ (51,232)
Avoided energy cost	\$1,793,141	\$70,422	\$72,172	\$73,964	\$75,798	\$77,676	\$79,598	\$81,565	\$83,579	\$85,640	\$87,750
Avoided Demand charges	\$135,666	\$5,328	\$5,460	\$5,596	\$5,735	\$5,877	\$6,022	\$6,171	\$6,323	\$6,479	\$6,639
Total Cash Flow	\$ 906,843	\$22,104	\$24,254	\$26,450	\$28,691	\$30,979	\$33,315	\$35,699	\$38,134	\$40,619	\$43,157
Cumulative Cash Flow		\$22,104	\$46,358	\$72,808	\$101,499	\$132,478	\$165,792	\$201,491	\$239,625	\$280,244	\$323,401

PRODUCTION SUMMARY											
	20 Year Total	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Plant capacity factor		100.0%	99.5%	99.0%	98.5%	98.0%	97.5%	97.0%	96.5%	96.0%	95.5%
Energy production (kWh)	8,308,647	436,149	433,969	431,788	429,607	427,426	425,246	423,065	420,884	418,703	416,523
Energy Unit Cost (\$/kWh)		\$0.16	\$0.17	\$0.17	\$0.18	\$0.18	\$0.19	\$0.19	\$0.20	\$0.20	\$0.21
PPA price (\$/kWh)		\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12
Avoided CO2 emissions (lbs)	7,452,857	391,226	389,270	387,314	385,358	383,402	381,445	379,489	377,533	375,577	373,621
Peak Demand Production (kW)		370.0	368.2	366.3	364.5	362.6	360.8	358.9	357.1	355.2	353.4
Blended Demand Value (\$/kW)		\$3.00	\$3.09	\$3.18	\$3.28	\$3.38	\$3.48	\$3.58	\$3.69	\$3.80	\$3.91
ZREC value (\$)	\$268,314	\$18,536	\$18,444	\$18,351	\$18,258	\$18,166	\$18,073	\$17,980	\$17,888	\$17,795	\$17,702

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	\$ (50,964)	\$ (50,696)	\$ (50,428)	\$ (50,159)	\$ (49,891)	\$ (49,623)	\$ (49,355)	\$ (49,086)	\$ (48,818)	\$ (48,550)
	\$89,909	\$92,119	\$94,381	\$96,695	\$99,063	\$101,487	\$103,966	\$106,503	\$109,099	\$111,755
	\$6,802	\$6,970	\$7,141	\$7,316	\$7,495	\$7,678	\$7,866	\$8,058	\$8,254	\$8,455
	\$45,748	\$48,393	\$51,094	\$53,852	\$56,667	\$59,542	\$62,478	\$65,475	\$68,535	\$71,660
	\$369,149	\$417,542	\$468,636	\$522,487	\$579,154	\$638,696	\$701,174	\$766,649	\$835,184	\$906,843

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	95.0%	94.5%	94.0%	93.5%	93.0%	92.5%	92.0%	91.5%	91.0%	90.5%
	414,342	412,161	409,980	407,800	405,619	403,438	401,258	399,077	396,896	394,715
	\$0.22	\$0.22	\$0.23	\$0.24	\$0.24	\$0.25	\$0.26	\$0.27	\$0.27	\$0.28
	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12
	371,665	369,709	367,753	365,796	363,840	361,884	359,928	357,972	356,016	354,060
	351.5	349.7	347.8	346.0	344.1	342.3	340.4	338.6	336.7	334.9
	\$4.03	\$4.15	\$4.28	\$4.41	\$4.54	\$4.67	\$4.81	\$4.96	\$5.11	\$5.26
	\$17,610	\$17,517	\$17,424	\$17,331	\$17,239	\$0	\$0	\$0	\$0	\$0

OTHER QUESTIONS (I)

Q: Regarding on-site subcontractors,
Are employees screened?
Do workers have their own toilets?
Do you take measures to prevent comingling with students?

A: Yes to all questions. Our subcontractors adhere to OSHA-30 standards. A background check is performed on all employees portable toilets are on-site, and there is no contact between the workers and students

We adhere to all of the host's specific requirements, and we ask NFPS to provide us with a list of those

Q: Will NFPS be liable for personal property tax on the system?

A: No. Solar systems are exempt from personal property tax under Connecticut State Law.

<http://www.cga.ct.gov/2011/pub/chap203.htm#Sec12-81.htm>

Moreover, the system will be owned by the Connecticut Green Bank, a state institution, which has specifically stated in an email that NFPS will not have to pay property taxes on the solar system.

OTHER QUESTIONS (II)

Q: How will snow affect the performance of the solar panels?

A: All production estimates are based on historical weather data. Because the snow is translucent and the panels a dark color, the sun will melt the snow. And since the panels are set at an angle, the snow will slide off. This may take anywhere from a day to a few days depending on the amount of snow.

Q: How will the panels impact the weight load on the roof if it snows?

A: The solar system will be engineered according to the roof specifications which take into consideration snow loads, dead loads, solar system weight, wind and headroom – all of which are certified by a professional structural engineer.



ACTION ITEMS



Board of Education Authorization to sign Letter of Intent to proceed with construction

List of NFPS specific requirements for subcontractors at schools



SCHOOL PROJECTS



Glenville School

31 Riversville Rd
Greenwich CT 06831

97.5 Kw

Solyndra panels
SMA inverters
January, 2010



Discovery Magnet School

4510 Park Ave
Bridgeport CT 06604

37.2 kW

Solyndra panels
SMA inverters
May, 2011

SCHOOL PROJECTS



John Winthrop Middle School

1 Winthrop Road
Deep River, CT 06417

108 kW

Solyndra panels
Solectria inverters
July, 2011



Ellsworth Elementary School

53 Ellsworth Avenue
Danbury CT 06810

54.9 kW

Schueco panels
SMA inverters
July, 2012

SCHOOL PROJECTS



Park Avenue Elementary School

82 Park Avenue
Danbury CT 06810

140.7 kW

Schueco panels
Solectria inverters
November, 2012



Lewis S. Mills Complex

26 Lyon Rd
Burlington, CT 06013

402 kW

Trina panels
Solectria inverters
June, 2013

SCHOOL PROJECTS



Valley Regional High School

256 Kelsey Hill Road,
Deep River, CT 06417

128.74 kW

tenKsolar panels
tenKsolar RAIS inverters
March, 2015



John Winthrop Middle School

1 John Winthrop Dr.,
Deep River, CT 06417

128.74 kW

tenKsolar panels
tenKsolar RAIS inverters
March, 2015