

BRANFORD BOARD OF EDUCATION

*****This meeting will be live streamed*****

THURSDAY

6:00 PM

May 14, 2020

FULL SPECIAL BOARD OF EDUCATION MEETING AGENDA

Branford Public Schools Mission and Vision Statement

Nurturing students and citizens who develop a deep commitment to learning today and leading tomorrow
is the central goal of Branford Public Schools.

AGENDA

- I. Call to Order**
- II. Public Comments**
- III. Presentation**
 - A. Overview Branford Clean Energy Committee**
- IV. Discussion/Action Item**
 - A. 2020-21 Adult Education Program Enhancements Project Application**
 - B. Flex Learning Update**
- V. Adjourn**

**This Board of Education meeting is being conducted remotely
in accordance with State of Connecticut Executive Order No. 7b,
issued by His Excellency Ned Lamont**

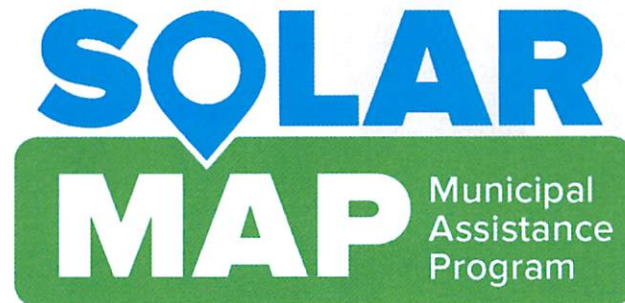
To access and listen to this meeting please go to www.branfordschools.org
and click on the link:

- **TO WATCH BOE MEETING VIDEOS, CLICK HERE**

**TO PARTICIPATE IN PUBLIC COMMENTS PLEASE CALL:
1 (260) 218-1403 (PIN: 916459019)**

Rules Governing Public Comments:

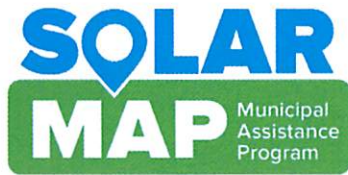
- 3 minutes will be allotted to each speaker. The Board may modify this limitation at the beginning of a meeting if the number of persons wishing to speak makes it advisable to do so. (Board Bylaw 9325)
- Conduct intended primarily to disrupt the Board of Education meeting shall not be permitted. Any speaker who engages in such conduct will be warned and allowed to correct such conduct. If the speaker continues to engage in the disruptive conduct such will be grounds for termination of the speaker's privilege to participate in public comment and may be deemed grounds for removal from the meeting site.
- All speakers must identify themselves by name and address.



A quasi-state agency and trusted partner to municipalities, is using solar to put towns and cities in charge of their energy costs. With the Green Bank's 'Green Bank Solar PPA,' municipalities can go solar, enjoying peace of mind and other benefits.

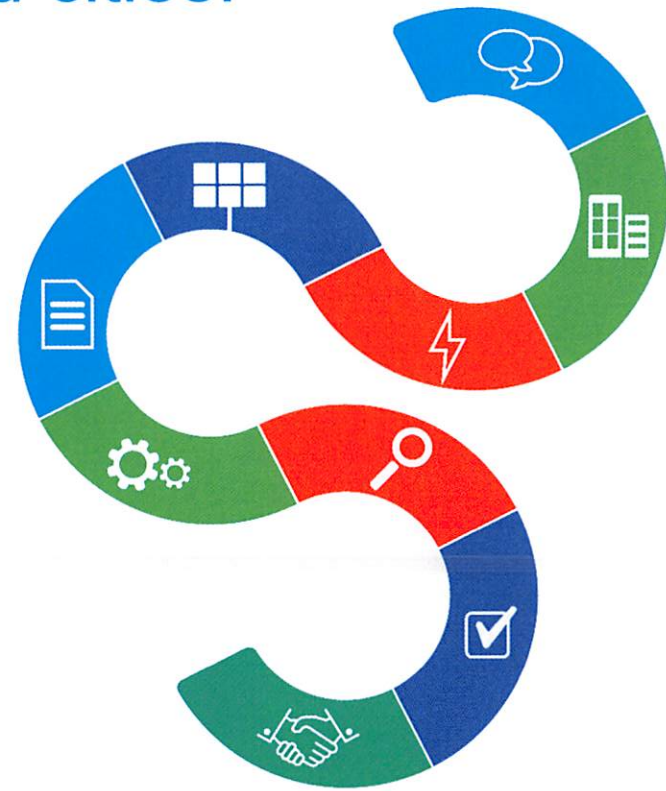


CSW Energy is experienced in working with municipalities to develop solar PV projects. Green Bank is working with CSW Energy to help municipalities to analyze their portfolio of buildings and identify opportunities for solar, get connected with a contractor.



Less work. More benefits.
Now even easier for towns and cities.

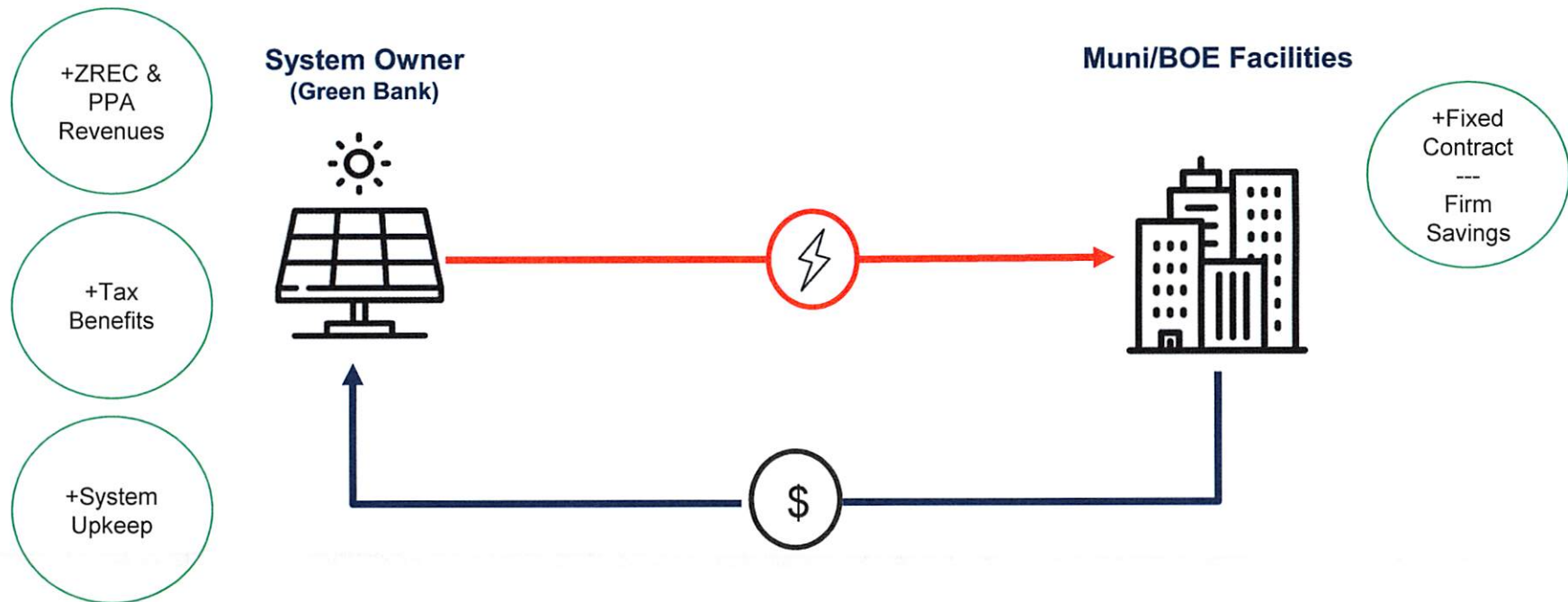
- Makes it even easier for municipalities to access renewable energy and achieve energy savings using the Green Bank Solar PPA
- Provides technical assistance support that simplifies every step of the process





- 1** **Engage.** The SolarMAP team will meet with you to understand your municipality's goals, gather information and identify key participants, and explain the SolarMAP process in more detail.
- 2** **Design.** Using the information you provide, the SolarMAP team will perform analysis of municipal sites, review energy demand, and develop system designs.
- 3** **Review.** After you review the system designs, the SolarMAP team will solicit proposals from qualified solar contractors and select the best proposal.
- 4** **Execute.** Once a proposal has been selected, the SolarMAP team will work with you to execute the PPA and begin construction of the solar project(s).

How a Power Purchase Agreement works:



What are the Benefits of a PPA?



No upfront costs

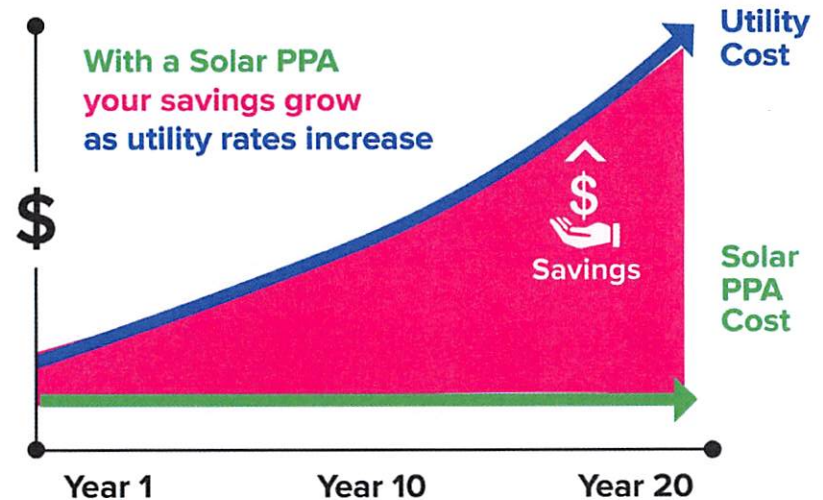
Lock in low electricity rate

Positive cash flow

No operations & maintenance costs

Preserve capital & credit lines

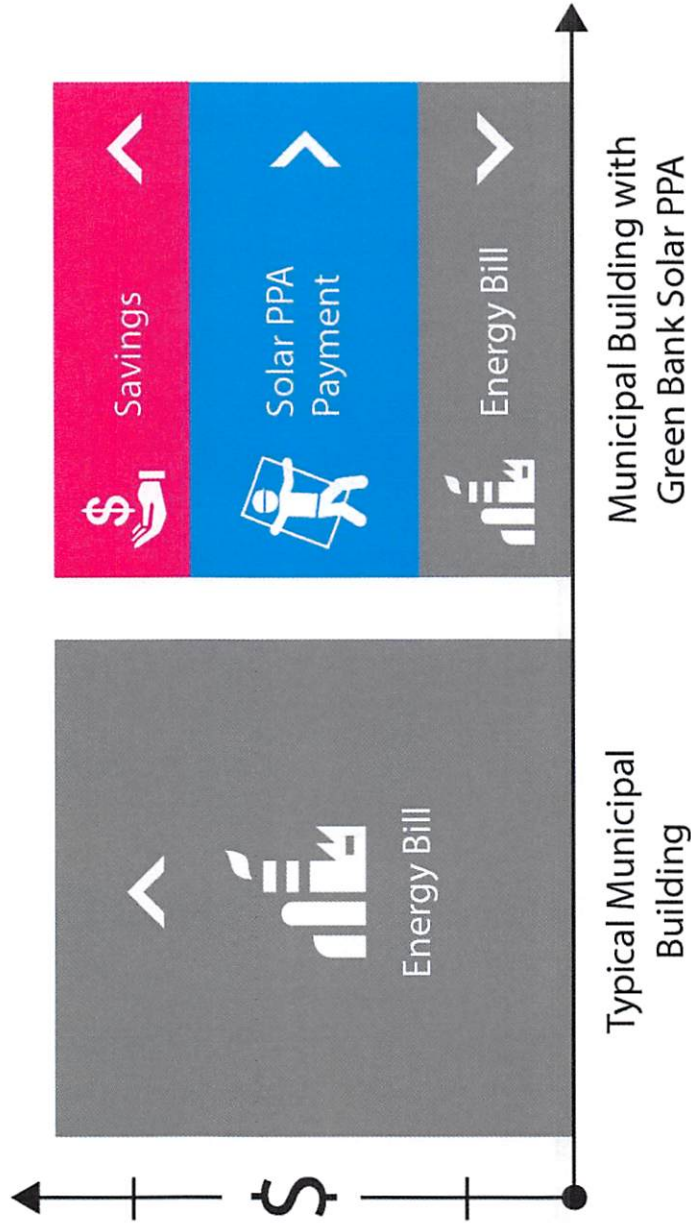
Managed by a third-party solar system owner



What are the Benefits of a PPA?



The value of solar PV comes from electricity cost savings!



Branford



Sliney Elementary School



Project Details

Project size (kW DC)	63.1
Estimated Annual Production (kWh)	78,173.40
Effective Utility Rate	\$0.0987

Potential Pricing

PPA Rate	\$0.089
Not-to-Exceed Construction Cost	\$2.20/W
PPA Discount to Utility	10%



Sliney Elementary School



Savings		
Term Savings	\$	45,285
Average Annual Savings	\$	2,264
First Year Savings	\$	782
<i>Operations & Maintenance Cost Included</i>		

Model and Finance Assumptions	
System Size	63 kW
Solar Energy Generated	78,173 kWh
Annual Solar System Degradation	0.64%
Solar Energy PPA Price	\$0.089 /kWh
Solar Energy Escalator	0.00%
Utility Energy Price	\$0.099 /kWh
Utility Energy Escalator	2.00%

Tisko Elementary School



Project Details

Project size (kW DC)	110.1
Estimated Annual Production (kWh)	134,425.20
Effective Utility Rate	\$0.0987

Potential Pricing

PPA Rate	\$0.084
Not-to-Exceed Construction Cost	\$2.20/W
PPA Discount to Utility	15%



Tisko Elementary School



Savings		
Term Savings	\$	90,528
Average Annual Savings	\$	4,526
First Year Savings	\$	2,016
<i>Operations & Maintenance Cost Included</i>		

Model and Finance Assumptions	
System Size kW	110 kW
Solar Energy Generated	134,425 kWh
Annual Solar System Degradation	0.64%
Solar Energy PPA Price	\$0.084 /kWh
Solar Energy Escalator	0.00%
Utility Energy Price	\$0.099 /kWh
Utility Energy Escalator	2.00%

Murphy Elementary School



Project Details

Project size (kW DC)	119.70
Estimated Annual Production (kWh)	147,729
Effective Utility Rate	\$0.0987

Potential Pricing

PPA Rate	\$0.082
Not-to-Exceed Construction Cost	\$2.20/W
PPA Discount to Utility	17%



Murphy Elementary School



Savings		
Term Savings	\$	105,050
Average Annual Savings	\$	5,253
First Year Savings	\$	2,511
<i>Operations & Maintenance Cost Included</i>		

Model and Finance Assumptions	
System Size	119 kW
Solar Energy Generated	147,729 kWh
Annual Solar System Degradation	0.64%
Solar Energy PPA Price	\$0.082 /kWh
Solar Energy Escalator	0.00%
Utility Energy Price	\$0.099 /kWh
Utility Energy Escalator	2.00%

Branford High School



Project Details

Project size (kW DC)	350
Estimated Annual Production (kWh)	510,218.00
Effective Utility Rate	\$0.1131

Potential Pricing

PPA Rate	\$0.090
Not-to-Exceed Construction Cost	\$1.80/W
PPA Discount to Utility	20%



Branford High School



Savings		
Term Savings	\$	448,671
Average Annual Savings	\$	22,434
First Year Savings	\$	11,735
<i>Operations & Maintenance Cost Included</i>		

Model and Finance Assumptions		
System Size	kW	350 kW
Solar Energy Generated		510,218 kWh
Annual Solar System Degradation		0.64%
Solar Energy PPA Price		\$0.090 /kWh
Solar Energy Escalator		0.00%
Utility Energy Price		\$0.113 /kWh
Utility Energy Escalator		2.00%

Walsh Intermediate School

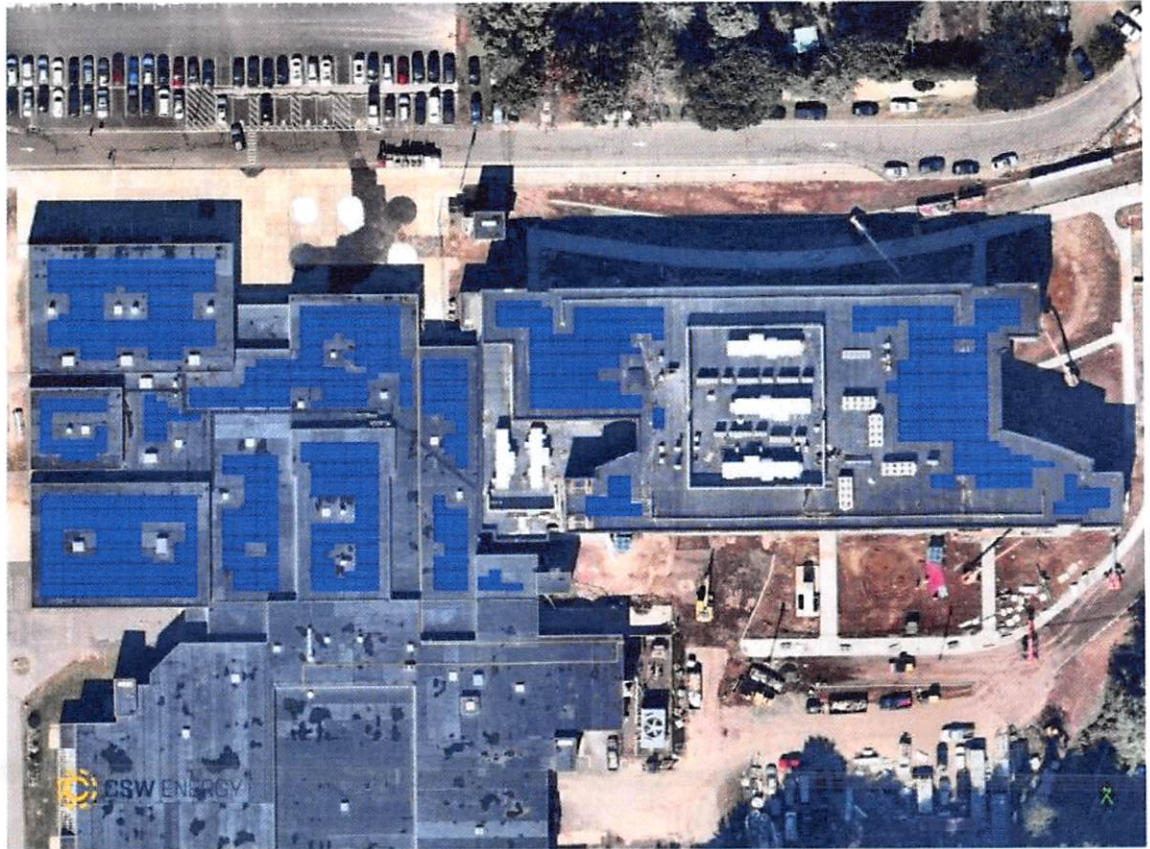


Project Details

Project size (kW DC)	478.9
Estimated Annual Production (kWh)	586,780.70
Effective Utility Rate	\$0.1131

Potential Pricing

PPA Rate	\$0.101
Not-to-Exceed Construction Cost	\$1.80/W
PPA Discount to Utility	11%



Walsh Intermediate School



Savings		
Term Savings	\$	394,462
Average Annual Savings	\$	19,723
First Year Savings	\$	7,041
<i>Operations & Maintenance Cost Included</i>		

Model and Finance Assumptions	
System Size kW	479 kW
Solar Energy Generated	586,780 kWh
Annual Solar System Degradation	0.64%
Solar Energy PPA Price	\$0.101 /kWh
Solar Energy Escalator	0.00%
Utility Energy Price	\$0.113 /kWh
Utility Energy Escalator	2.00%

Total Savings

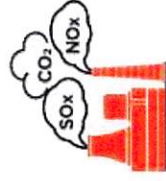


Name	First Year Savings	Term Savings
Sliney Elementary School	\$ 782	\$ 45,285
Tisko Elementary School	\$ 2,016	\$ 90,528
Murphy Elementary School	\$ 2,511	\$ 105,050
Branford High School	\$ 11,735	\$ 448,671
Walsh Intermediate School	\$ 7,041	\$ 394,462
Total	\$ 24,085	\$ 1,083,996

Environmental Impact



\$697,816 Lifetime public health value created



785 Tons CO2 emissions reduced, which equals:



11,775 Tree seedlings grown for 10 years



154 Passenger vehicles driven for one year or **1.7 million** miles

Next Steps and Timeline



Execute LOI and ZREC docs	By May 30 , 2020
Submit Bids for ZREC	By July 12, 2020
RFP for Contractors	Q3 2020
Execute PPA	Q4 2020
Construction	Q1 2021



Questions?

Appendix

What is a Power Purchase Agreement (“PPA”)?

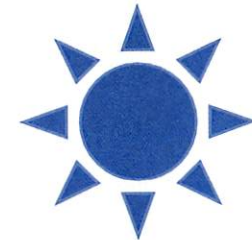


Contract between
Seller (generates
electricity) and
Buyer (purchases
electricity)

Green Bank is
Seller: Oversees
development,
construction, &
asset management

Customer is Buyer:
Purchases
electricity from
solar installed on
property

Solar MAP Summary



Project Scope &
Pre-development

Development &
Engineering

Construction

Operation &
Payment

Green Bank analyzes
municipal sites &
develops system
designs

Green Bank solicits
competitive proposals

Green Bank
develops PPA with
Municipality

**Green Bank &
Contractor** develop
& engineer project

Green Bank &
Contractor
coordinate on
documentation

PPA signed between
Green Bank &
Municipality; EPC
signed between
Contractor & Green
Bank

Contractor
constructs project &
receives
construction
payments from
Green Bank

After Construction
Complete, Green Bank
operates & maintains
solar system over the
term of the agreement.

Municipality pays the
PPA on a monthly
“actuals” basis directly
to the Green Bank

- “Actuals” = paying
for exactly what is
generated based off
of the solar
monitoring system

Site Review



Site	Desktop Review	VNM LOI?	Site Visit?	Size (kW-DC)	Production (kWh)	% Offset	Why?
Sliney Elementary School	Pass	No	Yes	63.1	78,173	59%	N/A
Tisko Elementary School	Pass	No	Yes	110.1	134,425	86%	N/A
Murphy Elementary School	Pass	No	Yes	119.7	147,729	81%	N/A
Branford High School	Pass	No	Yes	350.0	510,218	74%	N/A
Walsh Intermediate School	Pass	No	Yes	478.9	586,781	58%	N/A

Why Electric School Buses?

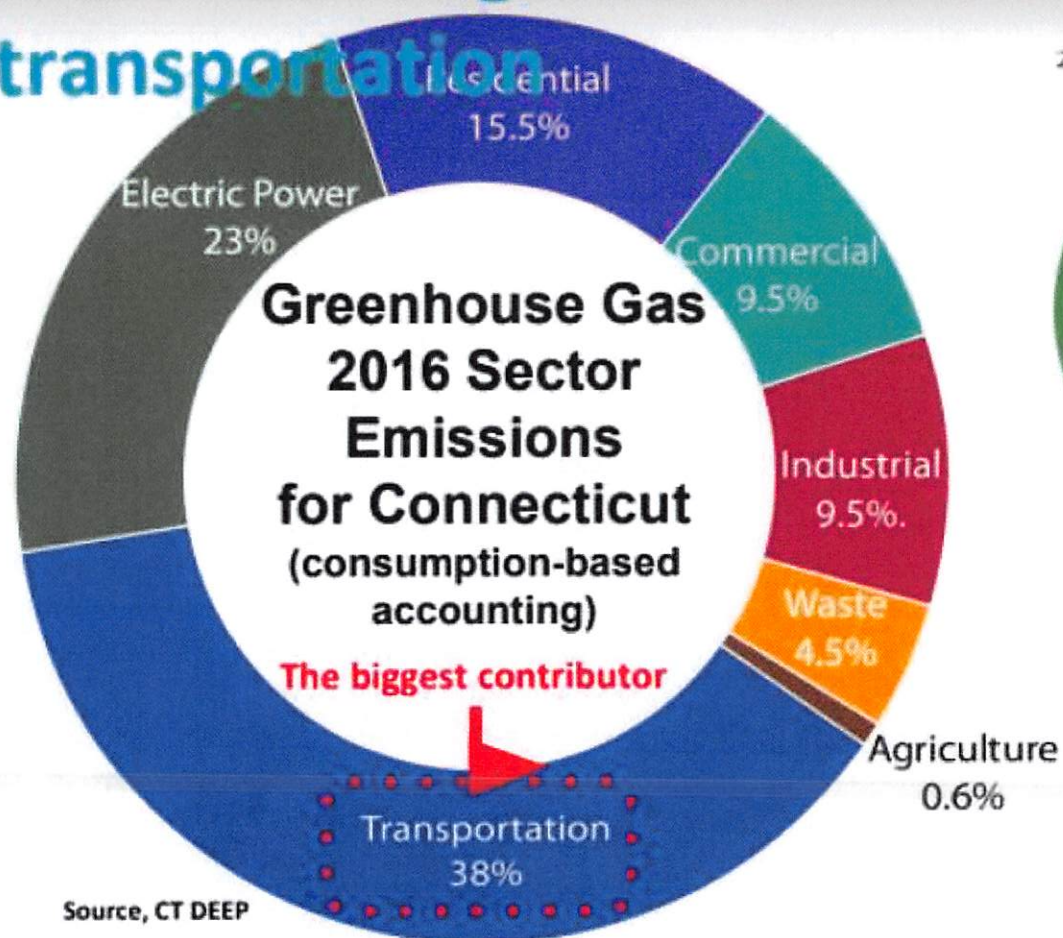
- Technology has arrived
- Predictable routes, usage
- No idling, Quiet!!!
- Fuel economy*:
 - 12 MPGe vs. 4.8 MPG
- Minimal maintenance
- Grants, incentives
- Smart grid / energy storage
- ***Lower life-cycle cost opportunity***
- ***Reduce exposure to most sensitive receptors***



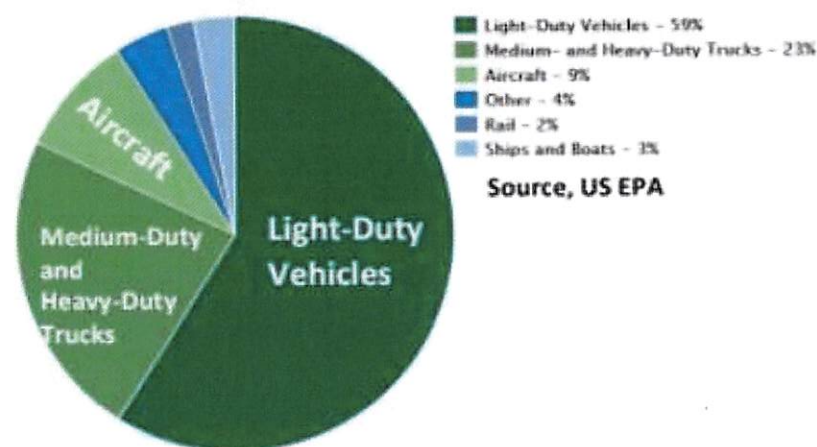


Diesel exhaust has been classified as the 6th most potent carcinogenic substance by the California scientific review panel (Wargo,2002). The dirtiest part of the day for many schoolchildren is the bus ride (www.ehpi.org). Exposure to idling buses increases the risk of asthma, decreased lung function, weakened immune systems, leukemia and susceptibility to infections. (Mazer, 2014).

Greenhouse gas emissions from transportation



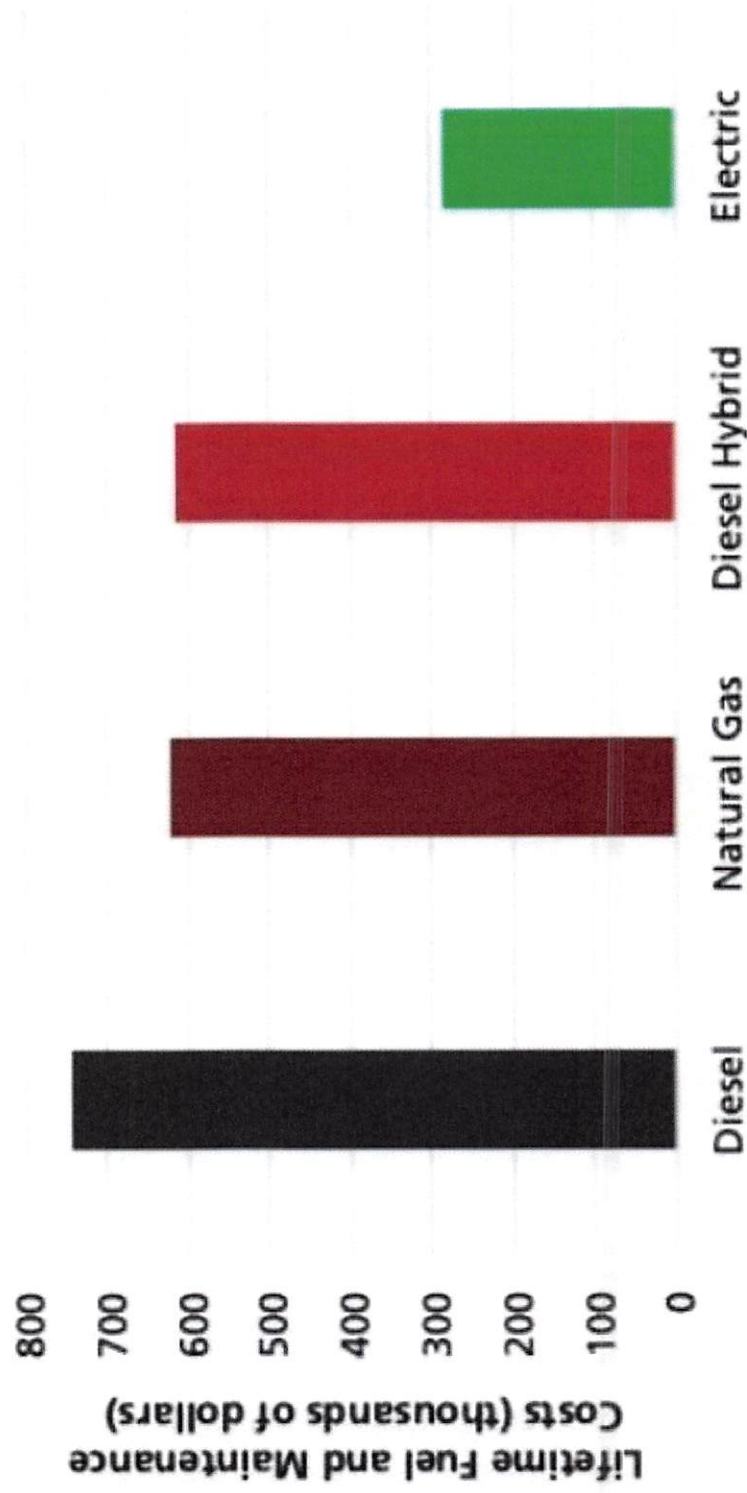
2017 U.S. Transportation Sector GHG Emissions by Source



Connecticut's Transportation Sector is our biggest contributor to climate changing emissions

Saving Money

Figure 4. Estimated Lifetime Fuel and Maintenance Costs of Transit Buses, by Fuel Type¹⁰⁸



Connecticut Approves \$1.7M in VW Funds for New School Buses

Posted on December 3, 2019

Connecticut's second round of Volkswagen settlement funding will be used to support a total of 15 clean air projects that will reportedly reduce almost 68 tons of nitrogen oxide emissions.

Connecticut has announced that it will allocate \$6.2 million of its Volkswagen settlement funds to support a total of 15 clean air projects in the state, including \$1.7 million for three projects for school buses.

Gov. Ned Lamont announced the second round of VW settlement funds, administered through the state's Department of Energy and Environmental Protection (DEEP), last week, according to a news release from Lamont's office. The funding is part of the state's \$55.7 million share of VW funding that is expected to be distributed over a 10-year period.

Bring an Electric Bus to Your Town!

To implement a successful electric school bus program in Connecticut, we need *YOUR* help to:

1. Build your Clean Transportation Team!
2. Raise support for clean buses in your community
3. Build a strong relationship with your local PTA: Work collaboratively!
4. Research service provider, school bus manufacturer, bus model, charging infrastructure
5. Identify funding sources: **VW, DERA, CT Green Bank, Clean Energy Works**
6. Make the ask
7. Submit an RFP to start your Electric Bus Pilot Program!