

**REGULAR CALENDAR**

**October 17, 2022**

**HOUSE OF REPRESENTATIVES**

**REPORT OF COMMITTEE**

**The Committee on Science, Technology and Energy to  
which was referred SB 259,**

**AN ACT relative to the definition of "municipal host" for  
purposes of limited electrical energy producers.**

**Having considered the same, report the same: NOT  
RECOMMENDED FOR FUTURE LEGISLATION.**

**Rep. JD Bernardy**

**FOR THE COMMITTEE**

## COMMITTEE REPORT

Committee:	Science, Technology and Energy
Bill Number:	SB 259
Title:	relative to the definition of "municipal host" for purposes of limited electrical energy producers.
Date:	October 17, 2022
Consent Calendar:	REGULAR
Recommendation:	NOT RECOMMENDED FOR FUTURE LEGISLATION

### STATEMENT OF INTENT

The proposed definitional change to "municipal host" includes quasi-public agencies (undefined) and housing authorities, as well as the Pease Development Authority. These entities are not consistent with the intent of the law applying to true municipalities and do not merit the cost shifting that would occur by receiving net metering benefits.

Vote 11-6.

Rep. JD Bernardy  
FOR THE COMMITTEE

Original: House Clerk  
Cc: Committee Bill File

## **REGULAR CALENDAR**

Science, Technology and Energy

**SB 259**, relative to the definition of "municipal host" for purposes of limited electrical energy producers. **NOT RECOMMENDED FOR FUTURE LEGISLATION.**

Rep. JD Bernardy for Science, Technology and Energy. The proposed definitional change to "municipal host" includes quasi-public agencies (undefined) and housing authorities, as well as the Pease Development Authority. These entities are not consistent with the intent of the law applying to true municipalities and do not merit the cost shifting that would occur by receiving net metering benefits. **Vote 11-6.**

Original: House Clerk  
Cc: Committee Bill File

**REGULAR CALENDAR**

**April 14, 2022**

**HOUSE OF REPRESENTATIVES**

**REPORT OF COMMITTEE**

**The Majority of the Committee on Science, Technology and Energy to which was referred SB 259,**

**AN ACT relative to the definition of "municipal host" for purposes of limited electrical energy producers.**

**Having considered the same, report the same with the recommendation that the bill be REFERRED FOR INTERIM STUDY.**

**Rep. JD Bernardy**

**FOR THE MAJORITY OF THE COMMITTEE**



**MAJORITY  
COMMITTEE REPORT**

<b>Committee:</b>	<b>Science, Technology and Energy</b>
<b>Bill Number:</b>	<b>SB 259</b>
<b>Title:</b>	<b>relative to the definition of "municipal host" for purposes of limited electrical energy producers.</b>
<b>Date:</b>	<b>April 14, 2022</b>
<b>Consent Calendar:</b>	<b>REGULAR</b>
<b>Recommendation:</b>	<b>REFER FOR INTERIM STUDY</b>

**STATEMENT OF INTENT**

This bill expands the definition of a "political subdivision" found in HB 315, passed last session, to also include "the State of New Hampshire, or any housing authority, or quasi-public entity, or the Pease Development Authority." Quasi-public entities are not defined in the bill. The bill creates the possibility of extensively increasing the amount of net metering and associated cost-shifting, hence further study is in order.

Vote 14-7.

Rep. JD Bernardy  
FOR THE MAJORITY

Original: House Clerk  
Cc: Committee Bill File

## REGULAR CALENDAR

Science, Technology and Energy

**SB 259**, relative to the definition of "municipal host" for purposes of limited electrical energy producers. **MAJORITY: REFER FOR INTERIM STUDY. MINORITY: OUGHT TO PASS WITH AMENDMENT.**

Rep. JD Bernardy for the **Majority** of Science, Technology and Energy. This bill expands the definition of a "political subdivision" found in HB 315, passed last session, to also include "the State of New Hampshire, or any housing authority, or quasi-public entity, or the Pease Development Authority." Quasi-public entities are not defined in the bill. The bill creates the possibility of extensively increasing the amount of net metering and associated cost-shifting, hence further study is in order. **Vote 14-7.**

Original: House Clerk

Cc: Committee Bill File

**REGULAR CALENDAR**

**April 14, 2022**

**HOUSE OF REPRESENTATIVES**

**REPORT OF COMMITTEE**

**The Minority of the Committee on Science, Technology and Energy to which was referred SB 259,**

**AN ACT relative to the definition of "municipal host" for purposes of limited electrical energy producers.**

**Having considered the same, and being unable to agree with the Majority, report with the following amendment, and the recommendation that the bill OUGHT TO PASS WITH AMENDMENT.**

**Rep. Lee Oxenham**

**FOR THE MINORITY OF THE COMMITTEE**

**MINORITY  
COMMITTEE REPORT**

<b>Committee:</b>	<b>Science, Technology and Energy</b>
<b>Bill Number:</b>	<b>SB 259</b>
<b>Title:</b>	<b>relative to the definition of "municipal host" for purposes of limited electrical energy producers.</b>
<b>Date:</b>	<b>April 14, 2022</b>
<b>Consent Calendar:</b>	<b>REGULAR</b>
<b>Recommendation:</b>	<b>OUGHT TO PASS WITH AMENDMENT 2022-1359h</b>

**STATEMENT OF INTENT**

This is a very simple bill that broadens opportunities for the state of New Hampshire, the Pease Development authorities, and housing authorities to benefit from the cost-savings associated with net-metering that arose out of last year's HB 2 (Ch. 91, Laws of 2021). A floor amendment will be available that would eliminate an inconsistency in the bill's wording regarding "political entities" and which resolves any ambiguity concerning "quasi-public entities" which was included to encompass the UNH and community colleges.

Rep. Lee Oxenham  
FOR THE MINORITY

Original: House Clerk  
Cc: Committee Bill File

## REGULAR CALENDAR

Science, Technology and Energy

**SB 259**, relative to the definition of "municipal host" for purposes of limited electrical energy producers. **OUGHT TO PASS WITH AMENDMENT.**

Rep. Lee Oxenham for the **Minority** of Science, Technology and Energy. This is a very simple bill that broadens opportunities for the state of New Hampshire, the Pease Development authorities, and housing authorities to benefit from the cost-savings associated with net-metering that arose out of last year's HB 2 (Ch. 91, Laws of 2021). A floor amendment will be available that would eliminate an inconsistency in the bill's wording regarding "political entities" and which resolves any ambiguity concerning "quasi-public entities" which was included to encompass the UNH and community colleges.

Original: House Clerk

Cc: Committee Bill File

Amendment to SB 259

1 Amend the bill by replacing section 1 with the following:

2

3 1 Limited Electrical Energy Producers Act; Definitions. Amend RSA 362-A:1-a, II-c to read as  
4 follows:

5 II-c. "Municipal host" means a customer generator with a total peak generating capacity of  
6 greater than one megawatt and less than 5 megawatts used to offset the electricity requirements of a  
7 group consisting exclusively of one or more customers who are political subdivisions, provided that  
8 all customers are located within the same utility franchise service territory. ~~[A municipal host shall  
9 be located in the same municipality as all group members if the facility began operation after  
10 January 1, 2021.]~~ A municipal host may be owned by either a public or private entity. For this  
11 definition, "political subdivision" means *the state of New Hampshire or* any city, town, county,  
12 school district, chartered public school, village district, school administrative unit, *housing*  
13 *authority, or quasi-public entity, the Pease development authority,* or any district or entity  
14 created for a special purpose administered or funded by any of the above-named governmental units.

HOUSE COMMITTEE ON Science, Technology and Energy

EXECUTIVE SESSION ON SB 259

BILL TITLE: relative to the alternative compliance payments for renewable energy obligations not met through the purchase of renewable energy credits.

DATE: October 6, 2022

LOB ROOM: 302-304

MOTION: (Please check one box)

x Recommend  Not recommend

Moved by Rep. \_\_Bernardy\_\_ Seconded by Rep. \_\_Thomas\_\_ Vote: \_\_7-10-5

MOTION: (Please check one box)

recommend x Not recommend  ITL  Retain (1st year)  Adoption of Amendment #                       
*11-6*  Interim Study (2nd year) (if offered)

Moved by Rep. \_\_Bernardy\_\_ Seconded by Rep. \_\_Thomas\_\_ Vote:                     

MOTION: (Please check one box)

OTP  OTP/A  ITL  Retain (1st year)  Adoption of Amendment #                       
 Interim Study (2nd year) (if offered)

Moved by Rep.                      Seconded by Rep.                      Vote:                     

MOTION: (Please check one box)

OTP  OTP/A  ITL  Retain (1st year)  Adoption of Amendment #                       
 Interim Study (2nd year) (if offered)

Moved by Rep.                      Seconded by Rep.                      Vote:                     

CONSENT CALENDAR?            Yes            No

Minority Report?            Yes            No If yes, author, Rep.:                      Motion:                     

Respectfully submitted, Rep. Fred Plett, Clerk

**HOUSE COMMITTEE ON Science, Technology and Energy**

**EXECUTIVE SESSION ON SB 259**

**BILL TITLE:** relative to the alternative compliance payments for renewable energy obligations not met through the purchase of renewable energy credits.

**DATE:** October 6, 2022

**LOB ROOM:** 302-304

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**MOTION: (Please check one box)**

Recommend       Not recommend

Moved by Rep. Bernardy      Seconded by Rep. Thomas      Vote: 11-6-5

**MOTION: (Please check one box)**

recommend       Not recommend       ITL       Retain (1<sup>st</sup> year)       Adoption of  
Amendment # \_\_\_\_\_  
 Interim Study (2<sup>nd</sup> year)      (if offered)

Moved by Rep. Bernardy      Seconded by Rep. Thomas      Vote: \_\_\_\_\_

**MOTION: (Please check one box)**

OTP       OTP/A       ITL       Retain (1<sup>st</sup> year)       Adoption of  
Amendment # \_\_\_\_\_  
 Interim Study (2<sup>nd</sup> year)      (if offered)

Moved by Rep. \_\_\_\_\_      Seconded by Rep. \_\_\_\_\_      Vote: \_\_\_\_\_

**MOTION: (Please check one box)**

OTP       OTP/A       ITL       Retain (1<sup>st</sup> year)       Adoption of  
Amendment # \_\_\_\_\_  
 Interim Study (2<sup>nd</sup> year)      (if offered)

Moved by Rep. \_\_\_\_\_      Seconded by Rep. \_\_\_\_\_      Vote: \_\_\_\_\_

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**CONSENT CALENDAR?**      \_\_\_\_\_ Yes      \_\_\_\_\_ No

**Minority Report?**      \_\_\_\_\_ Yes      \_\_\_\_\_ No      If yes, author, Rep.: \_\_\_\_\_      Motion: \_\_\_\_\_

Respectfully submitted, Rep. Fred Plett, Clerk





2022 SESSION

Science, Technology and Energy

Bill #: SB259 Motion: Recommend AM #: \_\_\_\_\_ Exec Session Date: 10/6/2022

<u>Members</u>	<u>YEAS</u>	<u>Nays</u>	<u>NV</u>
Vose, Michael Chairman		x	
Thomas, Douglas W. Vice Chairman	x		
Harrington, Michael D.		x	
Notter, Jeanine M.		x	
Merner, Troy E.		x	
Plett, Fred R. Clerk		x	
Berezhny, Lex		x	
Bernardy, JD		x	
Cambrils, Jose E.		x	
Ploszaj, Tom		x	
White, Nick D.			x
Lewicki, John		x	
Somssich, Peter F.	x		
Cali-Pitts, Jacqueline A.	x		
Mann, John E.	x		
Oxenham, Lee Walker	x		
Vincent, Kenneth S.			x
McGhee, Kat	x		
McWilliams, Rebecca J.	x		
Chretien, Jacqueline H.			x
Pimentel, Roderick L.			x



1/22/2021 10:09:50 AM  
Roll Call Committee Registers  
Report

2022 SESSION

Science, Technology and Energy

Bill #: SB259 Motion: Recommend AM #: \_\_\_\_\_ Exec Session Date: !0/6/2022

Parshall, Lucius

TOTAL VOTE:

			x
	7	10	5



## 2022 SESSION

## Science, Technology and Energy

Bill #: SB259

Motion: Not Recommend

AM #:

Exec Session Date: 10/6/2022

<u>Members</u>	<u>YEAS</u>	<u>Nays</u>	<u>NV</u>
Vose, Michael Chairman	x		
Thomas, Douglas W. Vice Chairman	x		
Harrington, Michael D.	x		
Notter, Jeanine M.	x		
Merner, Troy E.	x		
Plett, Fred R. Clerk	x		
Berezhny, Lex	x		
Bernardy, JD	x		
Cambrils, Jose E.	x		
Ploszaj, Tom	x		
White, Nick D.			x
Lewicki, John	x		
Somssich, Peter F.		x	
Cali-Pitts, Jacqueline A.		x	
Mann, John E.		x	
Oxenham, Lee Walker		x	
Vincent, Kenneth S.			x
McGhee, Kat		x	
McWilliams, Rebecca J.		x	
Chretien, Jacqueline H.			x
Pimentel, Roderick L.			x



1/22/2021 10:09:50 AM  
Roll Call Committee Registers  
Report

2022 SESSION

Science, Technology and Energy

Bill #: SB259 Motion: Not Recommend AM #: \_\_\_\_\_ Exec Session Date: 10/6/2022

Parshall, Lucius

x

TOTAL VOTE:

11

6

5

**HOUSE COMMITTEE ON SCIENCE, TECHNOLOGY AND ENERGY**

**EXECUTIVE SESSION on SB 259**

**BILL TITLE:** relative to the definition of "municipal host" for purposes of limited electrical energy producers.

**DATE:** April 12, 2022

**LOB ROOM:** 306 - 308

**MOTIONS: REFER FOR INTERIM STUDY**

Moved by Rep. Bernardy

Seconded by Rep. Lewicke

Vote: 14-7

**CONSENT CALENDAR: NO**

**Statement of Intent: Refer to Committee Report**

Respectfully submitted,

Rep Fred Plett, Clerk



Rep. Oxenham, Sull. 1  
April 7, 2022  
2022-1359h  
12/05

Amendment to SB 259

1 Amend the bill by replacing section 1 with the following:

2

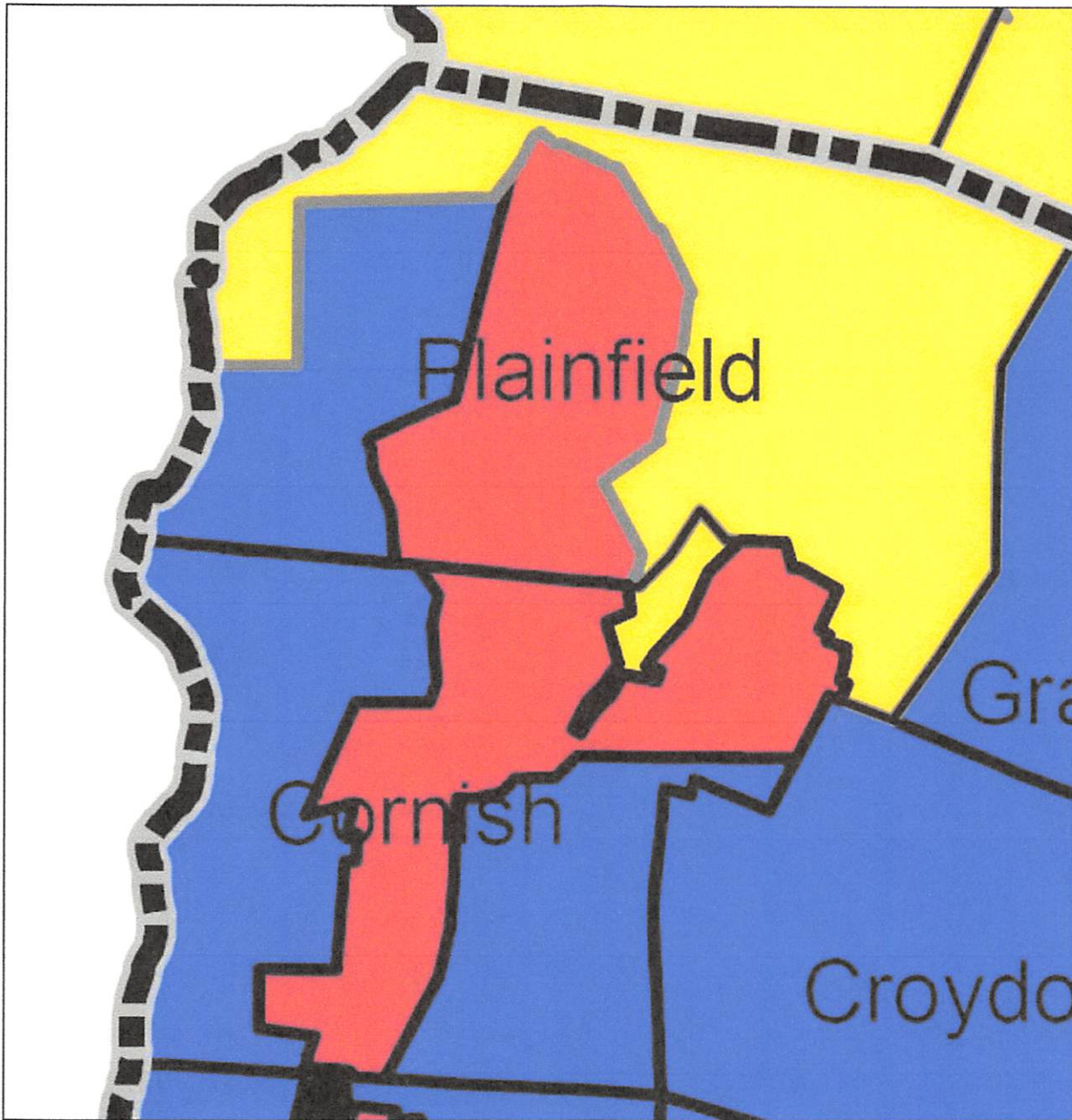
3 1 Limited Electrical Energy Producers Act; Definitions. Amend RSA 362-A:1-a, II-c to read as  
4 follows:







5 II-c. "Municipal host" means a customer generator with a total peak generating capacity of  
6 greater than one megawatt and less than 5 megawatts used to offset the electricity requirements of a  
7 group consisting exclusively of one or more customers who are political subdivisions, provided that  
8 all customers are located within the same utility franchise service territory. [~~A municipal host shall  
9 be located in the same municipality as all group members if the facility began operation after  
10 January 1, 2021.~~] A municipal host may be owned by either a public or private entity. For this  
11 definition, "political subdivision" means *the state of New Hampshire or* any city, town, county,  
12 school district, chartered public school, village district, school administrative unit, *housing  
13 authority, or quasi-public entity, the Pease development authority,* or any district or entity  
14 created for a special purpose administered or funded by any of the above-named governmental units.



# Plainfield and Cornish Electric Utility Service Areas

Source: <https://www.puc.nh.gov/Safety/Electrical%20Safety/Safety-NH-Electric-Franchise-Areas.pdf>



Legend	
<i>Service Areas</i>	
	LIBERTY
	UNITIL
	NHEC
	Joint Service
	Municipal
	EVERSOURCE





2022 SESSION

Science, Technology and Energy

Bill #: SB259 Motion: Interim Study AM #: 557A Exec Session Date: 4/12/22

<u>Members</u>	<u>YEAS</u>	<u>Nays</u>	<u>NV</u>
Vose, Michael Chairman	14		
Thomas, Douglas W. Vice Chairman	1		
Harrington, Michael D.	2		
<del>Notter, Jeanine M.</del> Rep. Fang	3		
Merner, Troy E.	4		
<del>Plett, Fred R. Clerk</del> Rep. Sheehan	5		
Berezhny, Lex	6		
Bernardy, JD	7		
Cambrils, Jose E.	8		
Ploszaj, Tom	9		
White, Nick D.	10		
Somssich, Peter F.		1	
Cali-Pitts, Jacqueline A.	11		
Mann, John E.	12		
Oxenham, Lee Walker		2	
<del>of en em</del> Lewicke, John	13		
Vincent, Kenneth S. (not here)			
McGhee, Kat		3	
<del>McWilliams, Rebecca J.</del> Rep. Gottling		4	
<del>Chretien, Jacqueline H.</del> Rep. Follmer		5	
Pimentel, Roderick L.		6	



2022 SESSION

Science, Technology and Energy

Bill #: \_\_\_\_\_ Motion: \_\_\_\_\_ AM #: \_\_\_\_\_ Exec Session Date: \_\_\_\_\_

Parshall, Lucius

TOTAL VOTE:

			7	
	14		7	

HOUSE COMMITTEE ON SCIENCE, TECHNOLOGY AND ENERGY

**SUBCOMMITTEE WORK SESSION** on SB 259

**BILL TITLE:** relative to the definition of "municipal host" for purposes of limited electrical energy producers.

**DATE:** September 27, 2022

**Subcommittee Members:** Reps. Bernardy, Merner and Oxenham

**Comments and Recommendations:** Recommended for further legislation - Merner & Oxenham.  
Not Recommended for further legislation - Bernardy.

**MOTION:**

Interim Study (2nd yr) Recommended for Future Legislation

Moved by Rep. Merner

Seconded by Rep. Oxenham

Vote: 2-1

Respectfully submitted,

Rep. JD Bernardy  
Subcommittee Chairman

HOUSE COMMITTEE ON SCIENCE, TECHNOLOGY AND ENERGY

**SUBCOMMITTEE WORK SESSION** on SB 259

**BILL TITLE:** relative to the definition of "municipal host" for purposes of limited electrical energy producers.

**DATE:** September 27, 2022

**Subcommittee Members:** Reps. Bernardy, Merner, Oxenham, McGhee and McWilliams

**Comments and Recommendations:**

Recommended for further legislation - Merner & Oxenham  
Not recommended for further legislation - Bernardy  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**MOTION:**  Recommended for Future Legislation  
 Not Recommended for Future Legislation

Moved by Rep. Merner      Seconded by Rep. Oxenham      Vote: 2-1

Respectfully submitted,

Rep. J.D. Bernardy  
Subcommittee Chairman/Clerk

**HOUSE COMMITTEE ON SCIENCE, TECHNOLOGY AND ENERGY**

**PUBLIC HEARING ON SB 259**

**BILL TITLE:** relative to the definition of "municipal host" for purposes of limited electrical energy producers.

**DATE:** April 5, 2022

**LOB ROOM:** 306-308                      **Time Public Hearing Called to Order:** 11:00 a.m.

**Time Adjourned:** 11:35 a.m.

**Committee Members:** Reps. Thomas, Plett, Harrington, Notter, Merner, Berezhny, Bernardy, Cambrils, Ploszaj, White, Somssich, Cali-Pitts, Mann, Oxenham, Lewicke, Vincent, McGhee, McWilliams, Pimentel and Parshall

**Bill Sponsors:**

Sen. Avard	Sen. Watters	Sen. Bradley
Sen. Sherman	Sen. Perkins Kwoka	Sen. Whitley
Sen. Rosenwald	Sen. Hennessey	Sen. Giuda
Sen. Prentiss	Sen. Soucy	Rep. Egan
Rep. Berry		

**TESTIMONY**

\* Use asterisk if written testimony and/or amendments are submitted.

Vice Chair Thomas – no sponsors present. He will introduce the bill. It amends political subdivision. Senator Avard then walked in.

Senator Avard. SB259 is housekeeping on HB315 passed last year. Expands eligible municipal hosts. This adds to the list the State of NH and Pease Development Authority. Oxenham – would you support an amendment to remove “in the same municipality”? Answer – if you all do. Senator Avard is aware there is heartburn around “quasi-public entities” It possible could be changes to university systems. Pimental – would a mobile home park fit in the definition of quasi-public entity? Answer – no.

Kelly Buchanan, Clean Energy NH – supports bill. Clarifies political subdivision. There was a separate bill, SB370, from Senator Perkins-Kwoka with similar subject matter. That was killed and the language in this bill was intended to combine the intent of the two bills. Thomas – Effect on ratepayers? Answer - No real effect.

Griffin Roberge, DOE – Department is neutral. Bill expands to include housing authorities, Pease, State of NH and quasi-public entities. Quasi-Public entities could stand some definition. DOE is continuing is Value of Distributed Energy Resources (VDER) study, and has retained a consultant to effect that. It will be concluded this spring. It is using NH-centric data. Rep. McWilliams – looking at approaches in other states? Answer – not certain. Rep. Oxenham – this will establish the value of DER, not just cost shifting. Rep. Pimental – the concern is that power lines, T&D, cross town borders, how does that jibe with location within a municipality? Answer – Bill says what it says. Rep. Harrington – questioned the 2 bills in the senate. Mr. Roberge explained again how they were combined. Rep. Harrington – this is a huge expansion – could they do 4 or 5 less than 5 MW installations? Answer – Good question. Rep. Thomas – have we given enough time to see how HB315 is working? No answer.

Clark Fenner – New England Solar Garden. Built seven 1 MW solar in state. This is a needed expansion of HB 315. Landfill in Laconia is constrained to 2.8 MW AC. Laconia already committed to a large development. The Rep. Oxenham request to eliminate town boundaries would allow us to go to Gilford, etc. to install a larger array. Rep. Plett – why expand if it results in more ratepayer

cost shifts? Reply – It is a market-based mechanism – municipalities have choices. Eversource will do as they are told.

Donna Gamache, Eversource. Eversource is working with developers. Timelines need to be met. If they don't meet them, the burden is on them. They can't change rules.





# House Remote Testify

## Science, Technology and Energy Committee Testify List for Bill SB259 on 2022-04-05

Support: 40 Oppose: 0 Neutral: 0 Total to Testify: 0

Export to Excel

<u>Name</u>	<u>City, State</u> <u>Email Address</u>	<u>Title</u>	<u>Representing</u>	<u>Position</u>	<u>Testifying</u>	<u>Non-Germane</u>	<u>Signed Up</u>
Watters, Senator David	Dover, NH david.watters@leg.state.nh.us	An Elected Official	Myself	Support	No	No	3/30/2022 8:32 AM
Perkins Kwoka, Senator Rebecca	Dover, NH Rebecca.PerkinsKwoka@leg.state.nh.us	An Elected Official	Myself	Support	No	No	3/30/2022 3:00 PM
Kroll, Heidi	Concord, NH kroll@gcglaw.com	A Lobbyist	Granite State Hydropower Association (GSHA)	Support	No	No	3/31/2022 11:08 AM
Rosenwald, Cindy	Nashua, NH cindy.rosenwald@leg.state.nh.us	An Elected Official	SD 13	Support	No	No	4/1/2022 11:51 AM
Beffa-Negrini, Patricia	Nelson, NH pbeffa@me.com	A Member of the Public	Myself	Support	No	No	4/1/2022 10:59 PM
Marks, Nisa	Henniker, NH nisa.marks@gmail.com	A Member of the Public	New Hampshire Audubon	Support	No	No	4/2/2022 7:27 PM
Weber, Jill	Mont Vernon, NH jill@frajilfarms.com	A Member of the Public	Myself	Support	No	No	4/3/2022 9:10 PM
Damon, Claudia	Concord, NH cordsdamon@gmail.com	A Member of the Public	Myself	Support	No	No	4/3/2022 9:29 PM
Richman, Susan	Durham, NH susan7richman@gmail.com	A Member of the Public	Myself	Support	No	No	4/3/2022 9:30 PM
SEIDLER, REINMAR	Cornish Flat, NH reinmar.seidler@gmail.com	A Member of the Public	Myself	Support	No	No	4/3/2022 9:31 PM
Lucas, Janet	Campton, NH janluca1953@gmail.com	A Member of the Public	Myself	Support	No	No	4/4/2022 7:55 AM
FRIEDRICH, ED	Loudon, NH erfriedrich@yahoo.com	A Member of the Public	Myself	Support	No	No	4/4/2022 8:21 AM
Jones, Andrew	Pembroke, NH arj11718@yahoo.com	A Member of the Public	Myself	Support	No	No	4/4/2022 8:49 AM



Devore, Gary	Pembroke, NH torin_asheron@yahoo.com	A Member of the Public	Myself	Support	No	No	4/4/2022 8:50 AM
Ellermann, Maureen	Concord, NH ellermannf@aol.com	A Member of the Public	Myself	Support	No	No	4/4/2022 8:52 AM
Rettew, Annie	Concord, NH abrettew@gmail.com	A Member of the Public	Myself	Support	No	No	4/4/2022 9:23 AM
Corell, Elizabeth	Concord, NH Elizabeth.j.corell@gmail.com	A Member of the Public	Myself	Support	No	No	4/4/2022 12:51 PM
Torpey, Jeanne	Concord, NH jtorp51@comcast.net	A Member of the Public	Myself	Support	No	No	4/4/2022 2:45 PM
Brennan, Nancy	Weare, NH burningnan14@gmail.com	A Member of the Public	Myself	Support	No	No	4/4/2022 3:11 PM
Jakubowski, Deborah	Loudon, NH Dendeb146@gmail.com	A Member of the Public	Myself	Support	No	No	4/4/2022 3:38 PM
Merlone, Lynn	Rindge, NH prulone@gmail.com	A Member of the Public	Myself	Support	No	No	4/4/2022 4:14 PM
Hershey, Jane	Rindge, NH janelhershey@gmail.com	A Member of the Public	Myself	Support	No	No	4/4/2022 4:14 PM
Thomas, Anne	Rindge, NH annethomasjazz@gmail.com	A Member of the Public	Myself	Support	No	No	4/4/2022 4:14 PM
Martin, Patricia A	Rindge, NH pmartin2894@yahoo.com	A Member of the Public	Myself	Support	No	No	4/4/2022 4:14 PM
Hennessey, Erin	Senate District 1, NH peter.oneill@leg.state.nh.us	An Elected Official	Myself	Support	No	No	4/4/2022 4:20 PM
Mott-Smith, Wiltrud	Loudon, NH wmottsm@worldpath.net	A Member of the Public	Myself	Support	No	No	4/4/2022 4:36 PM
Giuda, Bob	Warren, NH daley.frenette@leg.state.nh.us	An Elected Official	Senate District 2	Support	No	No	4/4/2022 5:13 PM
Zaenglein, Barbara	Amherst, NH bzaenglein@gmail.com	A Member of the Public	Myself	Support	No	No	4/4/2022 8:24 PM
Zaenglein, Eric	Amherst, NH henley11@comcast.net	A Member of the Public	Myself	Support	No	No	4/4/2022 8:27 PM
Spencer, Louise	Concord, NH kentstusa@aol.com	A Member of the Public	Myself	Support	No	No	4/4/2022 8:27 PM
perencevich, ruth	concord, NH rperence@comcast.net	A Member of the Public	Myself	Support	No	No	4/4/2022 10:11 PM

Mooney, Bridget	Wilton, NH bridget@moonchick.com	A Member of the Public	Myself	Support	No	No	4/4/2022 10:52 PM
Reardon, Donna	Concord, NH bugs42953@aol.com	A Member of the Public	Myself	Support	No	No	4/5/2022 8:14 AM
Koch, Helmut	Concord, NH helmut.koch.2001@gmail.com	A Member of the Public	Myself	Support	No	No	4/5/2022 8:17 AM
Koch, Laurie	Concord, NH kochlj@aol.com	A Member of the Public	Myself	Support	No	No	4/5/2022 8:19 AM
Bradley, Jeb	SD3, NH jeb.bradley@leg.state.nh.us	An Elected Official	SD3	Support	No	No	4/5/2022 8:55 AM
Sherman, Senator	SD 24, NH jennifer.horgan@leg.state.nh.us	An Elected Official	SD24	Support	No	No	4/5/2022 10:04 AM
M Clark, Denise	Milford, NH denise.m.clark03055@gmail.com	A Member of the Public	Myself	Support	No	No	4/5/2022 10:05 AM
Holt, David	Somersworth, NH davholt@aol.com	A Member of the Public	Myself	Support	No	No	4/5/2022 10:52 AM
Stinson, Benjamin	Concord, NH benrkstinson@gmail.com	A Member of the Public	Myself	Support	No	No	4/5/2022 11:31 PM



**CLEAN ENERGY NH**

Your Voice in All Energy Matters

14 Dixon Ave, Suite 202 | Concord, NH 03301 | 603.226.4732

April 5, 2022

Representative Michael Vose, Chair  
House Science, Technology, and Energy Committee  
Legislative Office Building, Room 304  
Concord, NH 03301

**Testimony on SB259: relative to the definition of "municipal host" for purposes of limited electrical energy producers**

Dear Chair Vose and members of the Committee,

Clean Energy NH is the Granite State's leading clean energy advocate, dedicated to supporting policies and programs that strengthen our state's economy, protect public health, and conserve natural resources. We are a member based non-profit representing over 300 individual, business, and municipal members.

**CENH strongly supports SB259**, which would clarify the definition of a political subdivision of state to explicitly include the state of New Hampshire, housing authorities, quasi-public entities (University and community college systems of NH), and Pease development authority as it relates to RSA 362-A and the landmark legislation that passed last year, on a bipartisan basis, to raise the net metering cap up to 5 MW for local renewable energy projects. The inclusion of the state of New Hampshire, housing authorities, quasi-public entities, and Pease development authority as eligible political subdivisions is a pragmatic change to the definition, which more accurately reflects the nature of all of these institutions. This change will help reduce ambiguity in the definition of a political subdivision, which was dealt with subsequent to the passage of HB315.

While this change more accurately defines a political subdivision of the state, SB259 will also support the responsible expansion of local renewable energy resources, help municipalities meet renewable energy and/or emission reduction goals, and help strengthen local economies with new business opportunities for clean energy. This small clarification in the definition further enables New Hampshire's municipalities to secure the maximum benefits of locally produced power. Small-scale municipal generating assets are an important part of our economy and our energy resiliency. This legislation is an important step forward towards energy independence for the Granite State.



**CLEAN ENERGY NH**

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14 Dixon Ave, Suite 202 | Concord, NH 03301 | 603.226.4732

**For the reasons described above, CENH asks you to find that SB259 ought to pass.**

Sincerely,

Kelly Buchanan  
Director of Legislative & Regulatory Affairs  
Clean Energy NH  
Kelly@cleanenergynh.org  
303-956-1246

48254



In partnership with:



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# New Hampshire VDER Study Methodology Overview

October 14, 2021



# Meeting Agenda

1

**Introduction**

2

**VDER Study Overview**

3

**Value Stack Methodologies**

4

**Rate & Bill Impact Assessment**

5

**Next Steps**

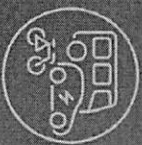
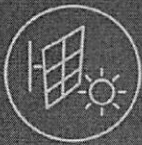
# 1. Introduction

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- **Project Team**
- **Meeting Objectives**



## Expertise



## Services



Buildings

Renewables

Mobility

Quantity Opportunities

Design Strategies

Evaluate Performance

## Our clients:

- Governments
- Utilities
- Service Providers

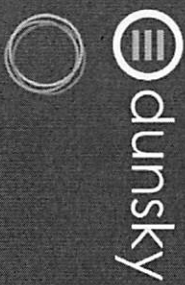




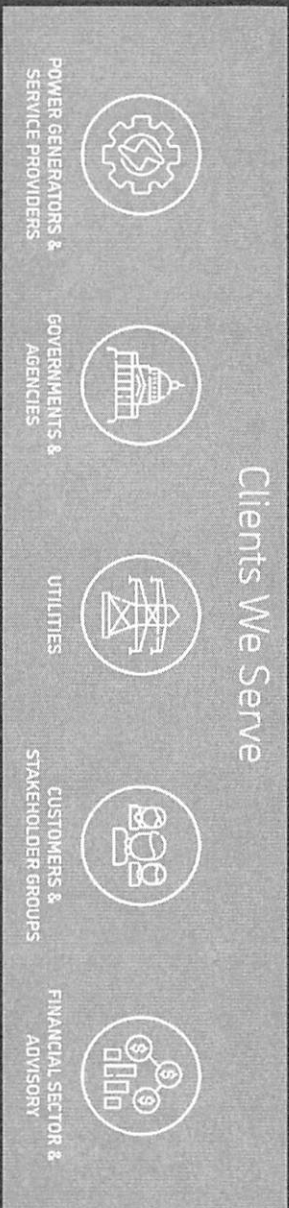
# Power Advisory LLC

Power Advisory is an electricity sector management consulting firm. Founded in 2007 and rooted in New England with headquarters in Concord, MA

Our consulting services are provided by seasoned electricity sector professionals, offering a wide breadth and significant depth of industry knowledge. This experience and knowledge, combined with a detailed understanding of market fundamentals yields strategic insights that provide clients with a competitive advantage.



## Clients We Serve



### Select Project Experience

- New York VDER Analysis (Multiple Clients)
- South Carolina Avoided Cost & Renewables Integration Independent Expert (SC PSC)
- ISO-NE Energy, Capacity, A/S and REC Forecasting
- Distributed Energy Resource Compensation Jurisdictional Scan (PEI Energy Corp)
- Vermont Renewables Program Design & Testimony (former VT Public Service Board)

# Speakers



**Leslie Malone** | SENIOR CONSULTANT  
Dunsky Energy + Climate Advisors



**Anirudh Kshemendranath** | SENIOR ANALYST  
Dunsky Energy + Climate Advisors



**Ahmed Hanafy** | SENIOR CONSULTANT  
Dunsky Energy + Climate Advisors



**John Dalton** | PRESIDENT  
Power Advisory

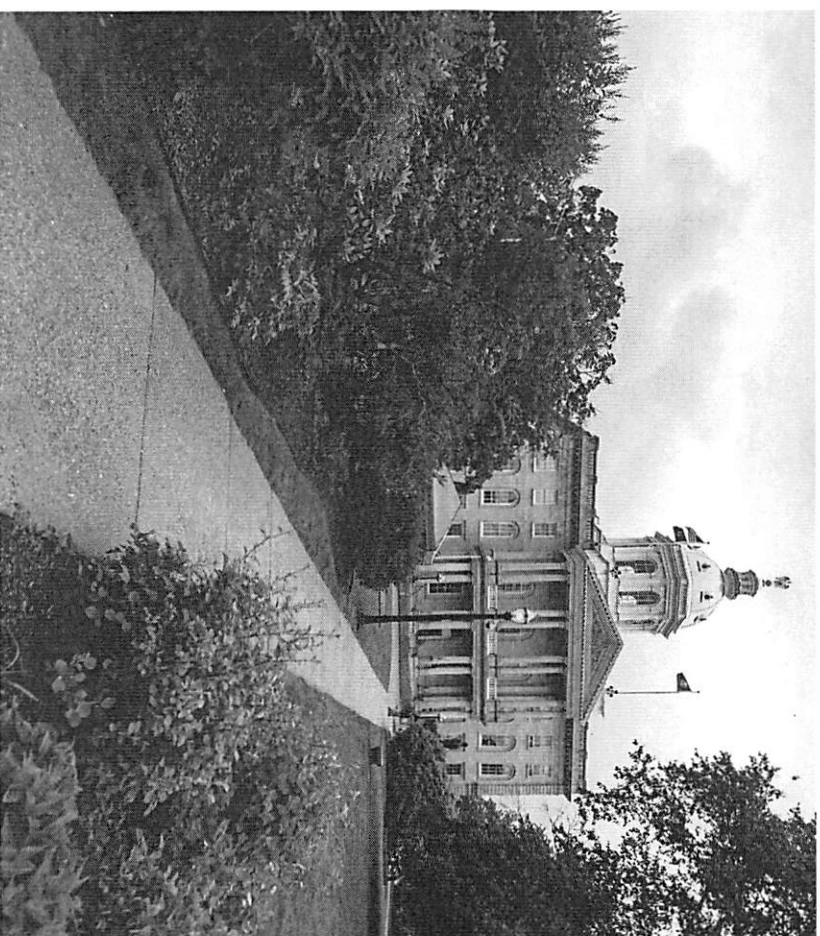
# Meeting Objectives



1 Review the VDER Study scope and assessment framework

2 Present the avoided cost methodologies and rate and bill impact approach

3 Gather initial feedback from stakeholders



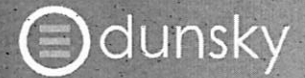


## 2. VDER Study Overview

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- Project Parameters
- Study Assessment Framework

# Project Parameters



## **Objectives of the VDER Study:**

1. Estimate hourly avoided costs attributable to net-metered distributed generation (DG) using test criteria methodologies from standard energy efficiency benefit-cost analysis where appropriate.
2. Rate and bill impacts will be analyzed to ascertain whether cost-shifting may occur between customers with and without net-metered distributed generation.
3. Provide data and analysis to inform future net metering rate design and tariff development.

## **Value stack assessment:**

- Sixteen avoided cost criteria assessed from the Utility Cost Test perspective
  - Environmental externality benefits considered as a sensitivity
- Two distributed energy resources (DERs) – solar (w/storage sensitivity) and small-scale hydro
- Three utility service territories (Eversource, Liberty, Unitil)

## **Bill and rate impact assessment:**

- Two net metering tariff scenarios: current alternative net metering tariff and another TBD

## **Study timeframe:**

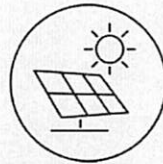
- 15-year period (2021-2035)

# VDER Study Assessment Framework



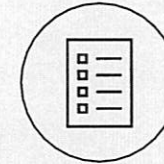
## Establish Avoided Cost Value Stack

- Technology neutral
- Hourly 8760 data
- For each study year



## Calculate Value Captured by DG Systems

- DG system production profiles
- Overlaid on avoided cost value stack



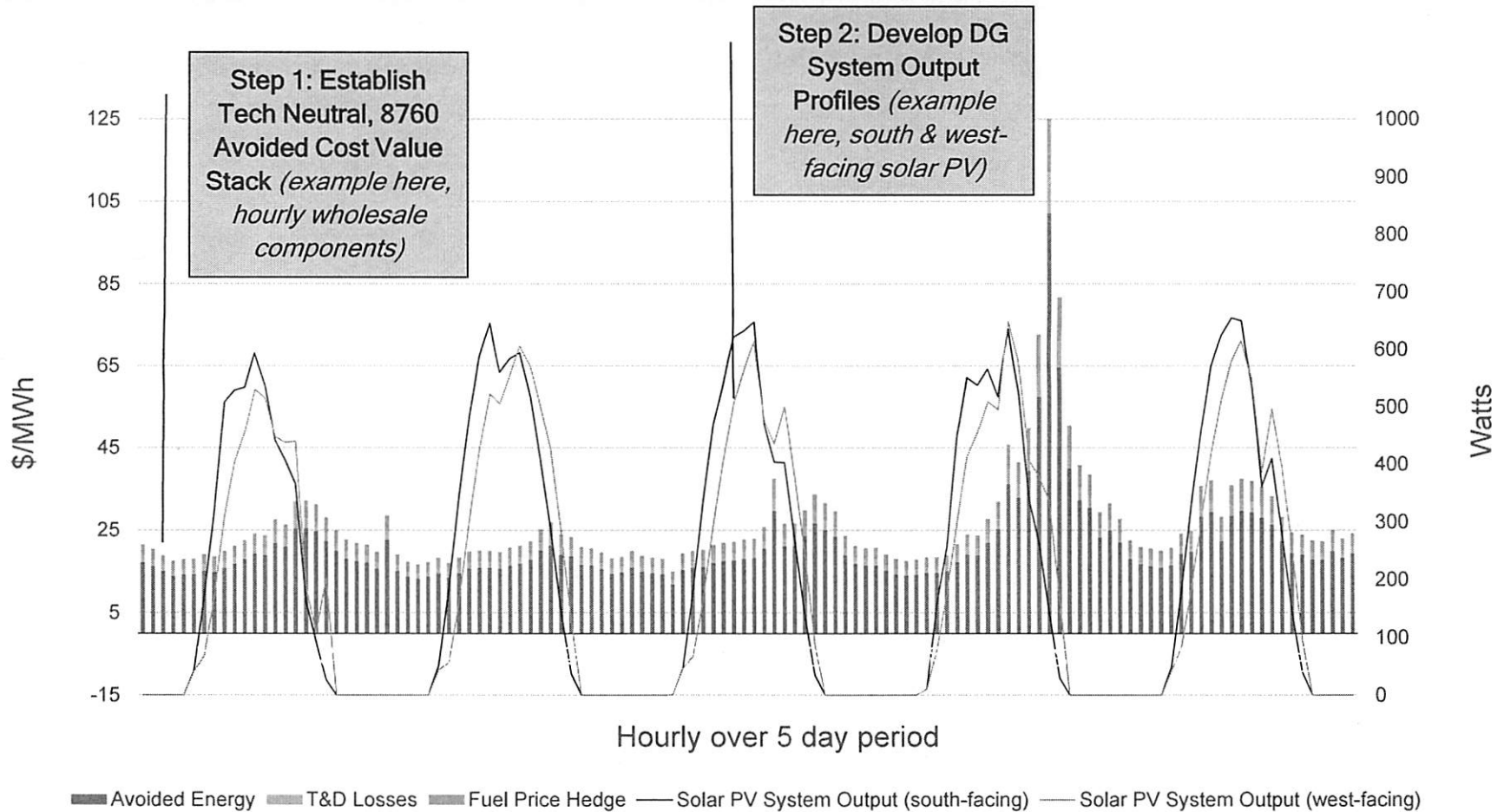
## Bill & Rate Impact Assessment

- Impact of DG deployment on NH ratepayers
- Considering two DG compensation scenarios



**Study Adders:** High Load Growth assessment  
Market Resource Value assessment

# Illustrative example of application of tech neutral, 8760 value stack





## 3. Avoided Cost Criteria Methodologies

---

- Overview
- Key AESC inputs
- Summary for each value stack component



The VDER Study avoided cost criteria fall into one of three groupings based on the data to be analyzed and evaluation methodology:

To be evaluated using AESC data, methods, and results.

To be evaluated using quantitative methods unrelated to AESC.

To be evaluated using quantitative proxy values or qualitative review.

- These groupings align with the *Study Parameters, Avoided Cost Criteria and Methods* as developed by the stakeholder group and approved by the Commission.
- Generally speaking, the blue and green methodologies are more computationally complex than the orange (i.e., the proxy values or qualitative review). As such, we intend to dedicate more time to reviewing the first two during this stakeholder session.

- As previously noted, the *Avoided Energy Supply Costs in New England: 2021 Report* (AESC or AESC 2021) study methodologies and avoided costs are used for various value stack components, as outlined in the study parameters as developed by the stakeholder group and approved by the Commission.
- AESC 2021 contains four “counterfactual” scenarios that forecast avoided costs under various assumptions regarding the degree of demand-side resource deployment in New England. **For this study we will be using Counterfactual #2.**

	Description
<b>Counterfactual #1</b>	Excludes EE, ADR, and BE impacts
<b>Counterfactual #2</b>	Excludes BE impacts only
<b>Counterfactual #3</b>	Excludes EE impacts only
<b>Counterfactual #4</b>	Excludes EE and ADR impacts only

- The four scenarios differ based on some combination of the inclusion/exclusion of energy efficiency (EE), active demand response (ADR), and building electrification (BE). All scenarios include transportation electrification and distributed generation impacts.
- For the VDER Study, the ideal avoided cost scenario would include region-wide EE, ADR, BE, and transportation electrification impacts along with non-New Hampshire distributed generation impacts. This scenario, unfortunately, is not readily available.
- In the absence of the ideal scenario, Counterfactual #2 – which excludes BE impacts – is deemed the most appropriate AESC 2021 scenario.

- Data for the AESC components (i.e., those to be evaluated using AESC data, methods, and results) is taken from Counterfactual #2 unless otherwise indicated in the methodologies.

# Criteria #1: Energy

## Rationale

This avoided cost represents the cost of energy that would otherwise be generated and procured through the ISO-NE wholesale energy market in the absence of distributed generation resources.

## Approach

The avoided wholesale energy price forecast from the AESC 2021 study is used to establish the 8760 hourly energy prices for New Hampshire (2021-2035).

Values from Counterfactual #2 (and the related workbook) are used here and throughout the study as it is deemed the most appropriate of the four counterfactual scenarios included in the AESC 2021 study.

## Data Sources

AESC 2021 (Counterfactual #2 workbook)

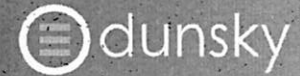
To be evaluated using AESC data, methods, and results.

AESC Wholesale Energy Prices [2021-2035]

8760 Hourly Avoided Energy Costs



# Criteria #2: Capacity Market Costs



## Rationale

The VDER Study is focused on the avoided cost impacts on New Hampshire regulated electric distribution utilities and the load-serving entities providing electricity supply to the utilities' customers. From that perspective, avoidance or reduction of capacity market charges is the basis for avoided cost calculations, to the extent that DG reduces utilities' peak hourly load.

## Approach

**Step 1:** The cleared Forward Capacity Auction price forecast from AESC 2021 is multiplied by 1 + the reserve margin (%). To account for the actual capacity charges levied on utilities, the cleared capacity prices are adjusted using the most recent differential between the FCM Regional Net Clearing Price and the Effective Charge-Rate short-term forecast.

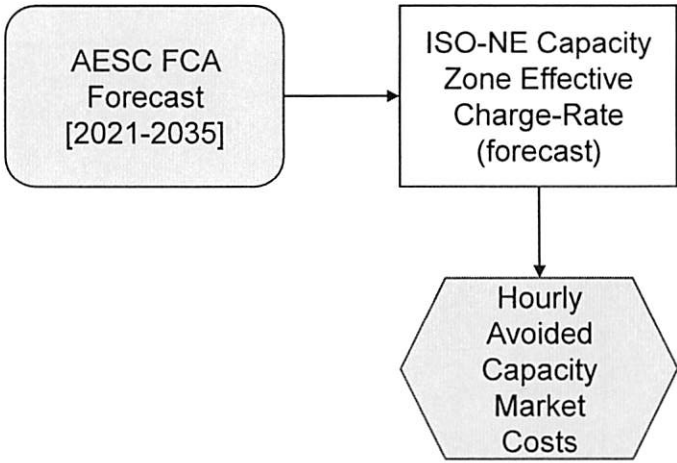
**Step 2:** Identify the ISO-NE's system peak hour and forecast the shift (due to DG, storage, and beneficial electrification, etc.) from 2021 to 2035.

**Step 3:** Distribute the effective FCM capacity charge across the probable capacity hours (as defined in Step 2).

## Data Sources

- AESC 2021 FCA price forecast
- ISO-NE FCM Net Regional Clearing Price and Effective Charge-Rate Forecast

To be evaluated using AESC data, methods, and results.





# Criteria #3: Ancillary Services and Load Obligation Charges



## Rationale

The AESC was not used as the primary basis of this methodology. Instead, avoided costs are based on ancillary service (AS) and other wholesale load-based (WL) charges assessed to NH utilities as a result of reduced load. The approach taken is similar to how the ancillary services and load obligation charges portion of surplus net metered generation payments are currently calculated.

## Approach

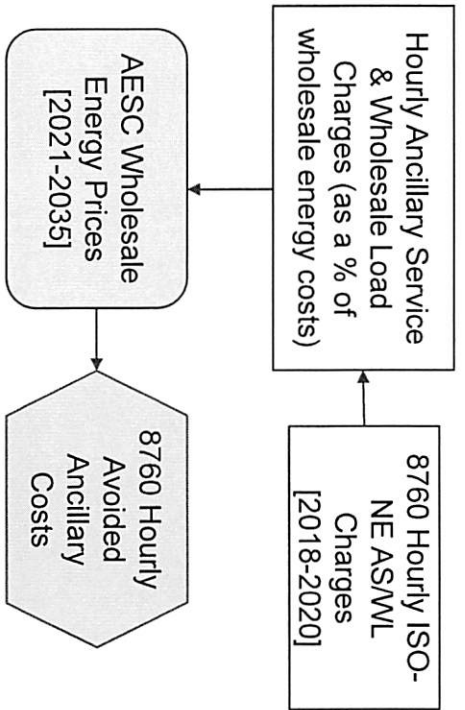
**Step 1:** Calculate historic hourly ancillary service and wholesale load obligation costs as a percentage of hourly energy costs. Annual hourly costs (as a percentage) are then averaged across 2018-2020 to generate an 8760 ancillary avoided cost template.

**Step 2:** The 8760 ancillary and load obligation cost template from Step 1 is multiplied against the forecasted wholesale energy prices from the AESC 2021 Study (2021 to 2035) to develop the avoided cost projections.

## Data Sources

- ISO-NE Hourly Wholesale Ancillary Service Load Report
- AESC 2021 Energy Prices (Counterfactual #2 workbook)

To be evaluated using AESC data, methods, and results.



# Criteria #4: RPS Compliance



## Rationale

The AESC 2021 Study provides RPS compliance avoided cost forecasts, by state, which quantify the avoided costs attributable to reducing load on which the RPS obligations are assessed. In NH, the applicable retail load reduction is based on behind-the-meter consumption (i.e., it excludes net-metered exports to the grid).

## Approach

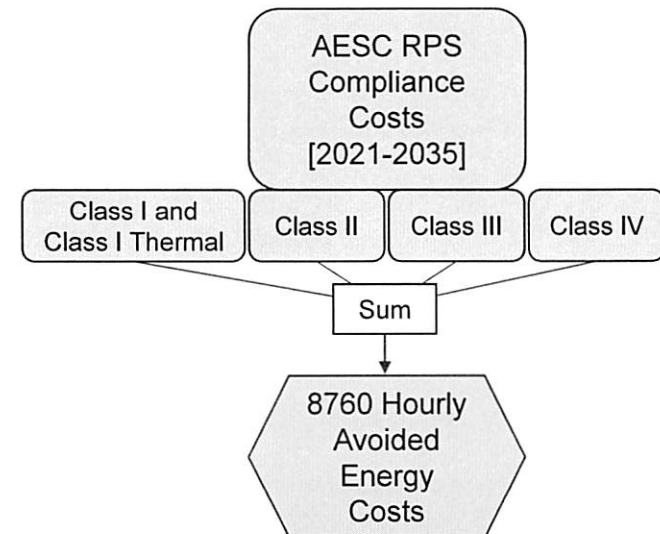
**Step 1:** For each study year, the RPS compliance costs for all NH RPS classes, under Counterfactual #2, are summed.

**Step 2:** The total per kWh RPS compliance costs are applied to all hours for each respective study year.

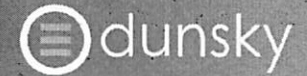
## Data Sources

AESC 2021 (Counterfactual #2 workbook)

To be evaluated using AESC data, methods, and results.



# Criteria #5: Transmission Charges



## Rationale

From a NH utility perspective, reductions in load attributable to DG resources may lower the allocation of Regional Network Service (RNS) and Local Network Service (LNS) charges assessed to NH utilities, which would represent avoided transmission cost.

## Approach

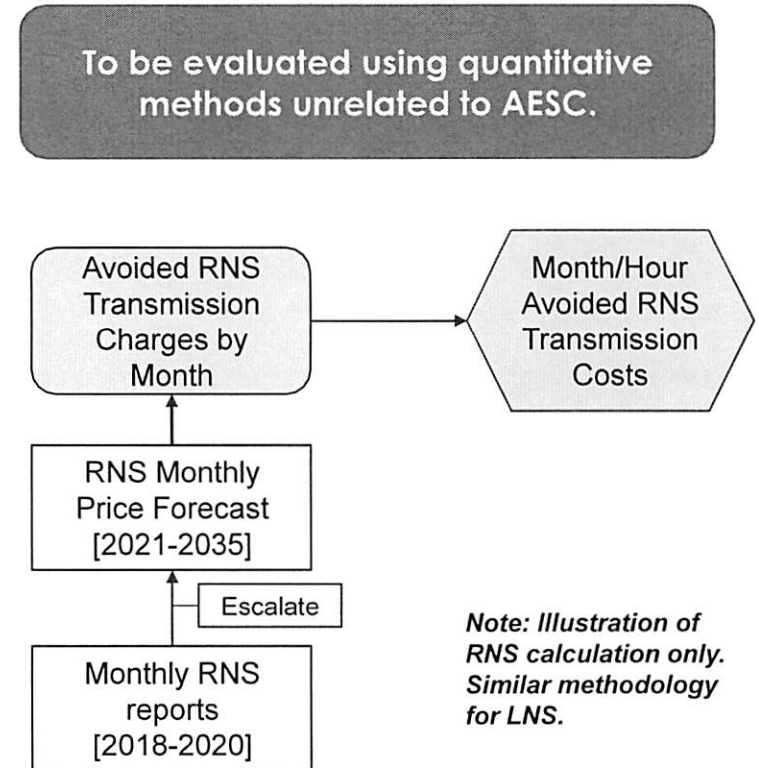
**Step 1:** Establish historic monthly RNS and LNS charges (2018-2020). All RNS and LNS cost categories that are allocated based on monthly Regional Network Load level will be included.

**Step 2:** Forecast monthly RNS and LNS charges (2021-2035) based on a) short-term ISO-NE RNS and LNS forecasts, and b) applying appropriate escalation factors (changes in the cost of capital and inflation) to historic and ISO-forecasted RNS and LNS charges.

**Step 3:** Distribute monthly RNS and LNS charges by hour, by establishing monthly peak load hours based on the last three years of data and then assigning the monthly charges to those peak hours.

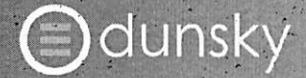
## Data Sources

RNS: ISO-NE Load Cost Reports (2018-2020) and Utility docket filings;  
RNS Rates: 2020-2024 PTF Forecast (PTO AC - Rates Working Group)  
LNS: Utility docket filings





# Criteria #6: Transmission Capacity



## Rationale

While the AESC outlines a general approach for assessing the value of system-level avoided T&D (non-PTF), we assume this component does not merit a complex computational approach, because transmission capacity value is primarily captured under the Transmission Charges criteria and there will be challenges in obtaining data that would support a precise estimate of non-PTF capacity.

## Approach

**Literature Review** - a review of other studies and resources will be conducted and based on the values captured under Transmission Charges and Distribution Capacity, as well as availability of data, a determination will be made to pursue a quantitative proxy value or qualitative review and discussion.

**Utility Interviews** - the literature review will be supplemented by discussions with the utilities regarding local transmission capacity investments that may be avoided or deferred based on load reductions attributable to DG resources.

**Note:** The review will ensure that potential double-counting of avoided costs covered under the Transmission Charges and/or Distribution Capacity criteria is addressed.

To be evaluated using quantitative proxy values or qualitative review.

# Criteria #7: Distribution Capacity

## Rationale

A quantitative proxy value will be used; however, any attempt to provide a precise estimate within the scope of the assessment may be limited by data availability. For this avoided cost component, we will use distribution system capacity expenditures related to load growth as the proxy for system-wide avoided distribution capacity costs associated with load reductions attributable to DG resources.

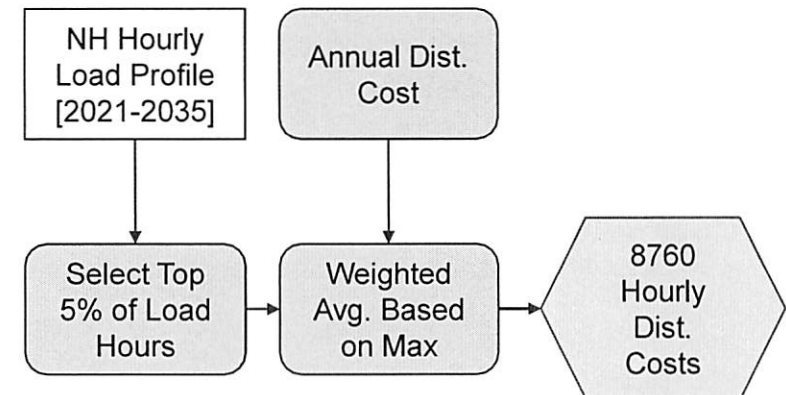
## Approach

**Step 1:** Assess actual and planned distribution-related capital expenditures, by utility, to determine load-related costs and compare to LVDG study results to develop an annual per unit, system-wide proxy value.

**Step 2:** Distribute annual avoided distribution capacity value by hour by a) establishing NH system load profiles, b) establishing distribution load during the top 5% of load hours (see next slide), and c) distributing the annual \$/kW avoided cost from Step 1 over the relevant peak hours.

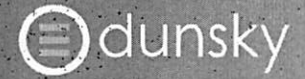
**Note:** Findings from the Locational Value of Distributed Generation (LVDG) Study will also inform the assessment, without duplicating efforts or double-counting values.

To be evaluated using quantitative proxy values or qualitative review.





# Criteria #8: Distribution System Operating Expenses



## Rationale

This component may be a cost or benefit, reflecting an increase or decrease in costs associated with infrastructure and services as a result of DG resources. We assume that this is a benefit stream and any related costs will be captured under T&D System Upgrades. Absent quantitative values or reliable proxy values, we will develop a qualitative review and discussion for this component.

## Approach

**Literature Review** - given limited data availability, a literature review/benchmarking exercise will be conducted using studies and other resources from jurisdictions with relatively similar levels of DG deployment and system characteristics to those of New Hampshire to develop a quantitative proxy value based on O&M and equipment life extension avoided costs:

- For utility O&M costs, we will assess \$/MVA of substation operation and maintenance, as well as \$/mile of feeder, in NH and other similar jurisdictions based on FERC Form 1 data.
- For equipment life extension, we will analyze the value of improved reliability and value of lost load, as well as other assessments.

## Data Sources

NREL Distribution Grid Integration Unit Cost Database  
FERC Form 1 Filings

To be evaluated using quantitative proxy values or qualitative review.



# Criteria #9: Transmission Line Losses



## Rationale

The electricity generated by customer-sited DG resources reduces the amount of energy that would otherwise be transmitted through the transmission network. Any surplus energy that is exported to the system is assumed to be contained within the distribution network and no transmission backflow occurs due to surplus energy. As such, the avoided transmission line losses apply to the total energy produced by the distributed resource.

## Approach

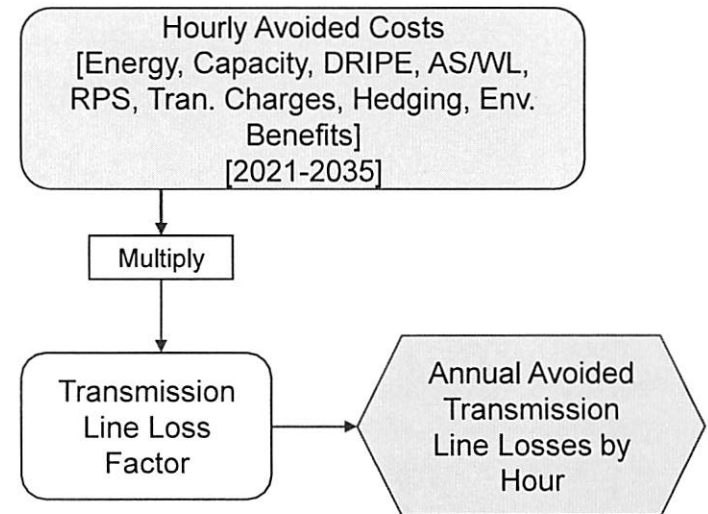
**Step 1:** Establish an appropriate system-wide transmission line loss factor based on NH utility information, the AESC 2021 Study, and other VDER studies.

**Step 2:** Calculate hourly avoided costs by multiplying hourly avoided costs - for each applicable avoided cost component studied here - by the transmission line loss factor for each study year (2021-2035).

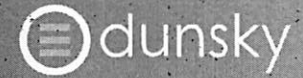
## Data Sources

- AESC 2021
- Utility line loss information
- Other VDER studies

To be evaluated using quantitative methods unrelated to AESC.



# Criteria #10: Distribution Line Losses



## Rationale

The electricity generated by customer-sited DG resources reduces the amount of energy that would otherwise be distributed through the distribution network. Any surplus energy that is exported back to the grid is assumed to be distributed within the distribution network. As such, avoided distribution line losses apply only to the behind-the-meter (BTM) portion of the energy produced by the DG resource.

## Approach

**Step 1:** Establish an appropriate system-wide distribution line loss factor based on NH utility information, the AESC 2021 Study, and other VDER studies.

**Step 2:** Apply distribution line losses by first calculating an appropriate derate factor for each customer class and system archetype size based on the net self supply. Customer-specific distribution line loss and applicable derate factor for residential and C&I are applied to the hourly avoided energy and RPS costs for each study year (2021-2035). For all other components, hourly avoided costs are multiplied by *only* the rate class-specific distribution line loss factor.

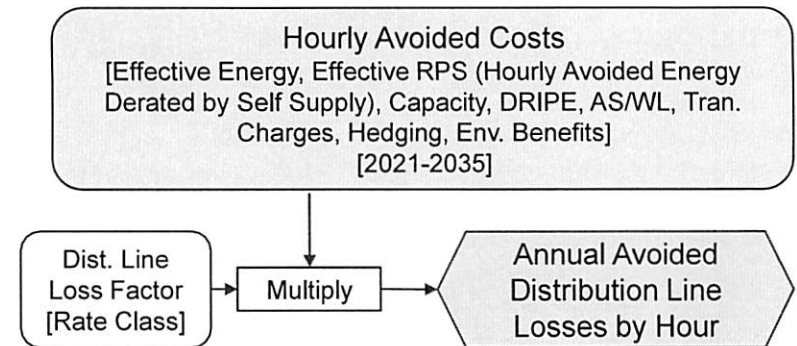
## Data Sources

AESC 2021

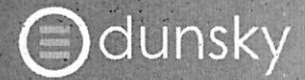
Utility specific distribution line loss factors by rate class

Other VDER studies

To be evaluated using quantitative methods unrelated to AESC.



# Criteria #11: Wholesale Market Price Suppression



## Rationale

Electricity generated at customers' sites reduces the overall energy and capacity procured through the wholesale market. The reduced demand results in lower market clearing prices, and this price suppression benefit - also known as Demand Reduction Induced Price Effect or DRIPE, ultimately may be passed on to market participants and their customers.

For this analysis, we will consider the direct price suppression benefits that result from reduced energy (Energy DRIPE), reduced capacity (Capacity DRIPE), and the indirect price suppression benefits that result from reduced electricity demand on gas prices, which in turn reduce electricity prices (Electric-to-Gas-to-Electric cross-DRIPE).

## Approach

The AESC 2021 methodology and data will be used to calculate each DRIPE component. DRIPE values from 2021 to 2025 will be taken directly from the AESC 2021; beyond 2025, the DRIPE values are modelled outside the workbook by applying the appropriate decay schedule (corrected for customer demand elasticity and generation effects) to the unhedged energy portion and gross DRIPE values.

## Data Sources

AESC 2021 (Counterfactual #2 workbook)

**To be evaluated using AESC data, methods, and results.**

**Energy and Capacity DRIPE Methodologies are outlined in the appendix.**



# Criteria #12: Hedging/Wholesale Risk Premium



## Rationale

The full retail price of electricity supply is generally greater than the sum of the wholesale market prices for energy, capacity, and ancillary services. In part, this is because retail suppliers incur various market risks when they set contract prices in advance of supply delivery over defined periods. Every reduction in wholesale energy and capacity obligations reduces the retail supplier's cost to mitigate those risks.

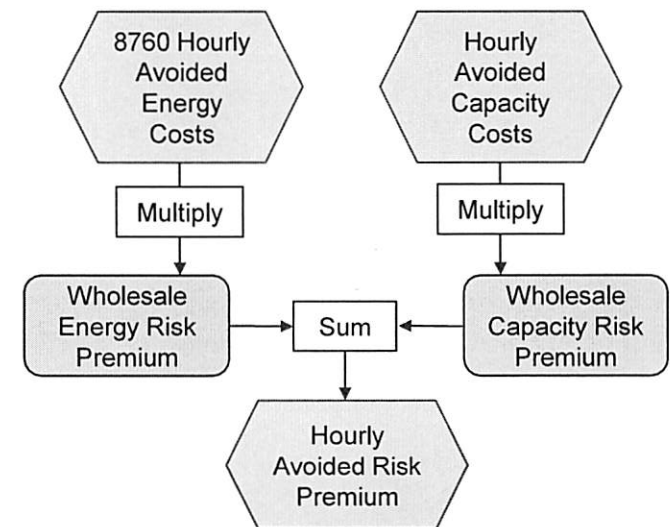
For this component, a quantitative proxy value - based on values from other studies - will be developed as per the approved VDER Study parameters.

## Approach

**Literature Review** - a literature review of other studies will be used to develop a quantitative proxy value for this criteria. The review will include utility-specific data first, where available, which will be compared to the value used in the AESC 2021 study and other state-specific values from the region to determine the most appropriate value.

**Note:** In keeping with the approach used in AESC 2021, the same wholesale risk premium value (%) is applied to avoided wholesale energy prices and to avoided wholesale capacity prices.

To be evaluated using quantitative proxy values or qualitative review.



## Criteria #13: Distribution Utility Admin



### **Rationale**

An increase in DG installed capacity may affect associated utility administration costs incurred or avoided, such as NEM program administration, metering, billing, collections, unreimbursed interconnection costs, evaluation, and load research.

### **Approach**

**Utility Interviews** - While a quantitative proxy or qualitative review was approved as part of the VDER study scope, we propose to work with utilities to develop NH-specific DG costs incurred or avoided, if possible. For each NH utility, we will request and assess net metering program administrative costs incurred or avoided (i.e., metering, billing, collections, evaluation, research, unreimbursed interconnection costs, etc.).

**Literature Review** - the per unit utility costs would then be benchmarked against costs from other similar jurisdictions, to the extent data is available.

To be evaluated using quantitative proxy values or qualitative review.

# Criteria #14: T&D System Upgrades Required



## **Rationale**

In the context of this study, the Transmission and Distribution System Upgrades criteria is a cost stream, with any corresponding benefits captured under the Distribution Grid Support Services criteria, as per the approved VDER Study scope.

While we propose to include a qualitative discussion for this criteria, a quantitative value will be considered depending on information gathered during the interviews and other relevant resource review.

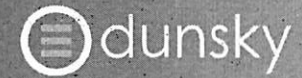
## **Approach**

**Interviews** - Discussions with utilities and developers will be used to gather information on NH-specific costs and benefits from accommodating increased penetration of DG resources, their magnitude, and the threshold at which significant investments would be required.

**Other Resources** - Interviews will be supplemented with other relevant resources, for example, NREL's Distribution Grid Integration Unit Cost Database.

To be evaluated using quantitative proxy values or qualitative review.

# Criteria #16: Environmental externality Benefits



## Rationale

The electricity generated from a DG resource may reduce marginal emissions from fossil fuel plants and avoid a portion of non-embedded carbon dioxide (CO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) externality costs that are captured as environmental program compliance costs.

## Approach

**Environmental Externality Benefit of CO<sub>2</sub>:** The Net Societal Cost of Carbon (SCC) is calculated by netting the forecasted RGGI allowance price from the Gross SCC. The Net SCC is multiplied by the corresponding 8760 hourly marginal emission rates to arrive at an hourly externality benefit for avoided CO<sub>2</sub>, expressed in ¢/kWh.

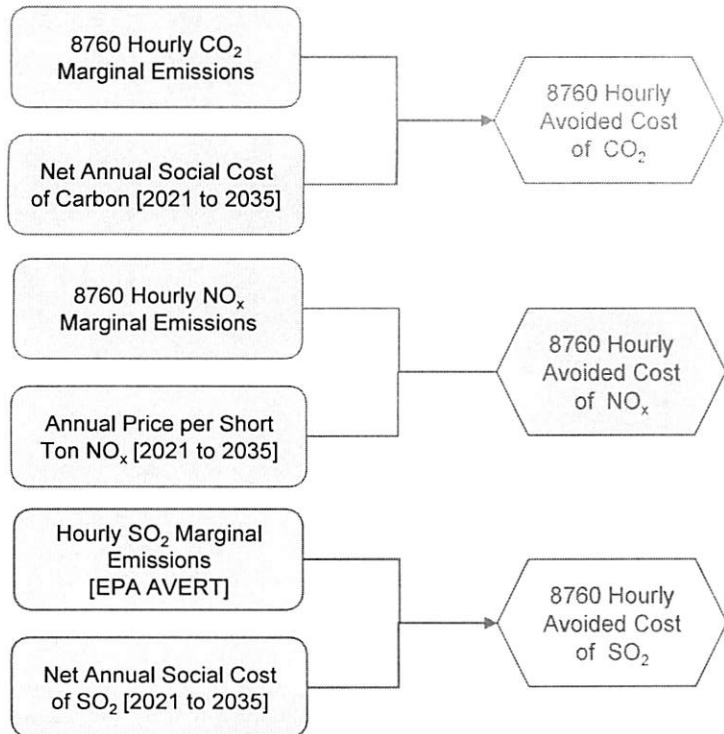
**Environmental Externality Benefit of NO<sub>x</sub>:** The price per short ton for NO<sub>x</sub> is multiplied by the corresponding 8760 hourly marginal emission rates to arrive at an hourly externality benefit for avoided NO<sub>x</sub>, expressed in ¢/kWh. The avoided Net Cost of NO<sub>x</sub> would consider NH specific NO<sub>x</sub> compliance costs.

**Environmental Externality Benefit of SO<sub>2</sub>:** The avoided Net Societal Cost of SO<sub>2</sub> would consider the SO<sub>2</sub> spot auction prices and any relevant NH specific SO<sub>2</sub> compliance costs. The Net Social Cost of SO<sub>2</sub> is multiplied by the corresponding marginal emission rates from EPA's AVERT Model to arrive at an annual environmental externality avoided cost value for SO<sub>2</sub>, expressed in ¢/kWh.

## Data Sources

- AESC 2021
- EPA Regulatory Impact Analysis for the Proposed Carbon Pollution Guidelines for Existing Power Plants and Emission Standards for Modified and Reconstructed Power Plans
- EPA AVERT Model

To be evaluated using quantitative methods unrelated to AESC.





# Criteria #17: Distribution Grid Support Services



## Rationale

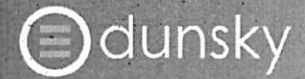
This criteria is assumed to represent an *avoided* cost stream, because any *incurred* costs should be captured under the T&D system upgrades component. Given limited data availability, this criterion will be evaluated using a qualitative review, although a quantitative proxy value will be developed if sufficient relevant information is available to do so.

## Approach

**Literature Review** - A literature review based on resources from EPRI, NREL, and USDOE, as well as information from relevant NHPUC dockets, will be conducted. The qualitative discussion will focus on the capabilities of inverters, the extent to which advanced inverters are expected to be deployed in the state, and the utilities' ability to leverage the capabilities of advanced inverters to avoid frequency and voltage regulation, upgrades and related costs. Other technologies and strategies that provide grid support services will also be reviewed and evaluated as appropriate.

To be evaluated using quantitative proxy values or qualitative review.

## Criteria #18: Resilience Services



### **Rationale**

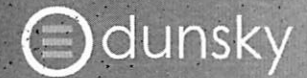
This component is assessed through a qualitative review, given the inherent challenges in defining and quantifying “resiliency.” Review and evaluation with respect to the potential services provided and associated values will be included in the final report as a placeholder for future discussion and analysis.

### **Approach**

**Literature Review** - a literature review and qualitative assessment of potential resilience services and values will be conducted, using reports by LBNL and other government sources, any available information related to local pilot projects, and other relevant resources.

To be evaluated using quantitative proxy values or qualitative review.

# Criteria #19: Customer Installed Net Costs



## Rationale

This component is not considered part of the avoided cost value stack but may be used in future cost-benefit assessments.

## Approach

**Step 1:** Develop projections for upfront CAPEX and OPEX costs over lifetime of DG system, using data from various resources.

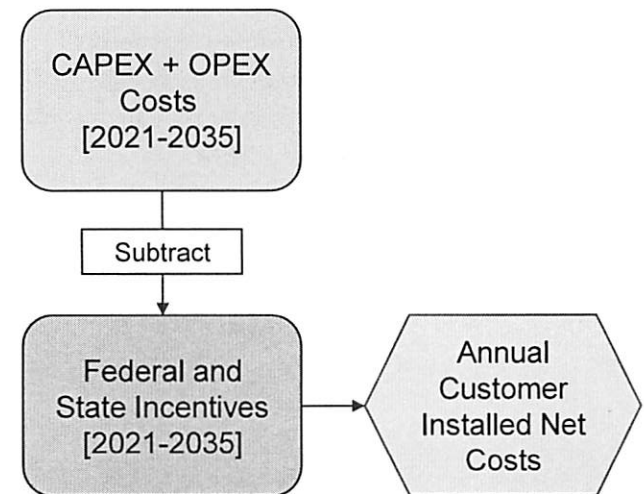
**Step 2:** Develop annual incentive projections for solar PV systems based on federal investment tax credits and NH renewable energy rebates for residential and commercial solar projects.

**Step 3:** Customer net installed costs (2021-2035) will be the sum of net present value of the upfront and O&M costs minus available incentives.

## Data Sources

LBNL's Tracking the Sun  
NREL's Annual Technology Baseline (ATB)  
NH Department of Energy rebate program databases

To be evaluated using quantitative methods unrelated to AESC.





# 4. Rate & Bill Impacts Assessment

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- Overview of Assessment
- Methodology
- Key Considerations

**Provides insight into the impact of DG deployment in New Hampshire on ratepayers, taking into account both benefits and costs that would be incurred by the utilities**

- The assessment is intended to serve as a future-looking estimate of the direction and magnitude of the impacts of DG deployment on all ratepayers (i.e., DG and non-DG customers) and any potential cost-shifting between customers with and without net-metered DG.

**The analysis will be conducted under two scenarios for DG compensation:**

- The existing alternative net metering tariff (effective September 2017); and
- A different tariff structure based on the outcomes of the VDER study (details to be determined)

**The assessment will highlight the impacts across:**

- The three regulated electric utilities serving New Hampshire
- 3 to 4 representative rate classes for each utility (e.g., residential, small general service, large general service)
- Focus on three archetypes of customers
  - Typical DG Customer for each rate class
  - Typical Non-DG Customer for each rate class
  - Average Utility Customer for each rate class

## Step 1: Develop Baseline (i.e., No-DG) and DG Scenarios

- Estimate load (energy and demand) by utility and select rate class with and without future DG
- Estimate average monthly electricity consumption and billing demand for each of the three customer groups (DG, non-DG, average) across select rate classes/utilities, with and without future DG
- Estimate the portion of DG production to be consumed behind the meter versus that exported to the grid by DG customers in each rate class

### Notes:

- In the absence of DG projections by utility and rate class, we will use historical net metering interconnection and other data to develop assumptions to segment statewide DG projections by utility and rate class.
- Solar is expected to represent the majority of DG systems; however, where applicable, consideration of alternative DG technologies (e.g., micro hydro) will be taken into account, either by assigning certain rate classes to an alternative DG technology or by creating a composite DG system that represents the portfolio of DG technologies adopted by customers in that rate class.

## Step 2: Assess Rate Impacts for each rate class

### No-DG Rates:

- Determine baseline revenue requirements for generation, transmission and distribution
- Estimate no-DG rates for each rate class/utility

### DG Rates:

- Assess key avoided costs and program costs (including lost revenue criteria #15) attributable to DG
- Allocate avoided costs and costs to the applicable customer classes
- Determine post-DG revenue requirements for generation, transmission and distribution
- Estimate post-DG rates for each rate class/utility

### Rate Impacts:

- Estimate the change in rates (\$ and %) attributable to DG for each rate class/utility

### Cost Allocation Approach

Avoided Costs and Program Costs will be calculated across rate classes, and then redistributed back to individual rate classes based on the utilities' cost allocation methodologies to compute the rate impacts.

Given that cost allocation approaches vary by utility and rate proceeding, general assumptions will be further developed. This includes consideration of:

- How costs are attributed to different rate classes; and
- How different rate components (i.e., energy charges, demand rates, fixed charges) are used to recover costs.



## Step 3: Bill Impacts

- Estimate pre-DG bills for the average customer across each rate class and utility for each year of the study period (2021-2035).
- Using the calculated post-DG rates and consumption, estimate post-DG electricity bills for three representative customer groups across each utility and rate class for each year of the study period (2021-2035):
  - Typical DG Customer
  - Typical Non-DG Customer
  - Average Utility Customer

### *Sample Output (for each compensation scenario)*

Change in Annual Electricity Bills	Utility 1 (e.g., Eversource)		
	Rate Class 1 (e.g., Residential)	Rate Class 2 (e.g., Small General Service)	Rate Class 3 (e.g., Large General Service)
Typical DG Customer			
Typical Non-DG Customer			
Average Utility Customer			

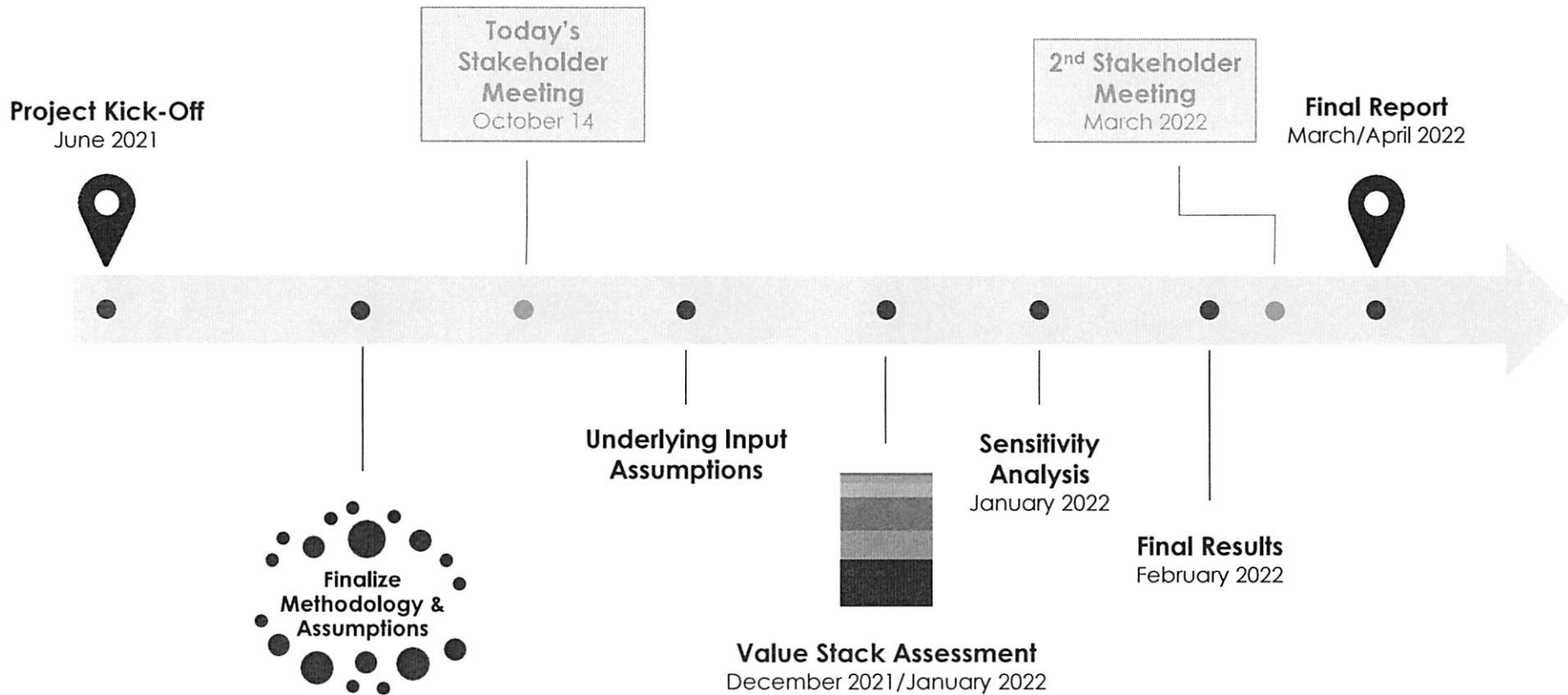
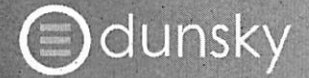


# 5. Next Steps

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- Study Timeline
- Next Steps

# Study Timeline



- **Methodologies**

- Written comments will be accepted **by email** until October 25, 2021:
  - Stakeholder comments should be submitted to: David Wiesner and Karen Cramton
  - **Note: stakeholders comments should also be circulated to all those on the distribution list**



- **Assessments**

- Study assessments will be conducted during the November 2021 to February 2022 timeframe.

- **Next Stakeholder Session**

- Presentation of final results to Stakeholders (March 2022)



# Contact

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**David Wiesner**

Legal Director/Sr. Hearings Examiner

[David.K.Wiesner@energy.nh.gov](mailto:David.K.Wiesner@energy.nh.gov)

Tel: 603-271-3670

**Karen Cramton**

Sustainable Energy Director

[Karen.P.Cramton@energy.nh.gov](mailto:Karen.P.Cramton@energy.nh.gov)

Tel: 603-271-3670



## Counterfactual Selection Rationale

- AESC 2021 contains four “counterfactual” scenarios that forecast avoided costs under various assumptions regarding the degree of demand-side resource deployment in New England.
- The four counterfactual scenarios differ based on some combination of the inclusion/exclusion of energy efficiency (EE), active demand response (ADR), and building electrification (BE).
- All counterfactual scenarios include transportation electrification and distributed generation impacts.

	Description
Counterfactual #1	Excludes EE, ADR, and BE impacts
Counterfactual #2	Excludes BE impacts only
Counterfactual #3	Excludes EE impacts only
Counterfactual #4	Excludes EE and ADR impacts only

- For the NH VDER Study, the ideal avoided cost scenario would include region-wide EE, ADR, BE, and transportation electrification impacts along with non-New Hampshire distributed generation impacts. This scenario, unfortunately, is not readily available.
- In the absence of the ideal AESC counterfactual, **Dunsky recommends using Counterfactual #2.**

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## Adjustments for Embedded NH DG Impacts

- All AESC scenarios assume DG deployment in the region, including in New Hampshire.
- It is unlikely the inclusion of NH-based DG materially impacts the avoided cost values relative to an ideal scenario that excludes these resources.
- Thus, **Dunsky does not recommend any adjustments to Counterfactual #2 to account for forecasted New Hampshire DG** as the impact relative to regional load is minimal.

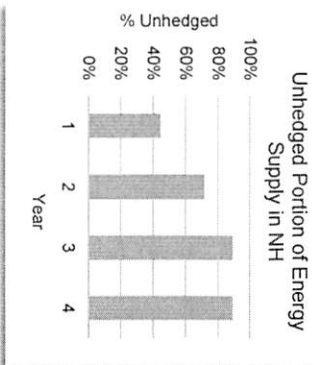


# Energy DRIPE: Calculation Methodology



$$\text{Net DRIPE} = \text{Gross DRIPE} \times$$

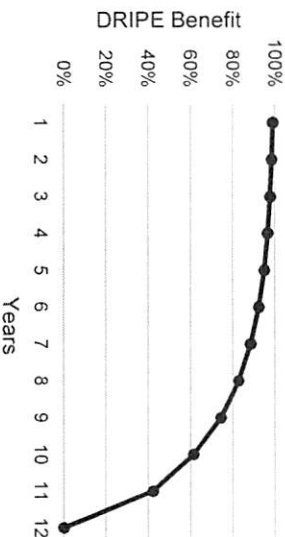
Portion of energy purchased on the spot market



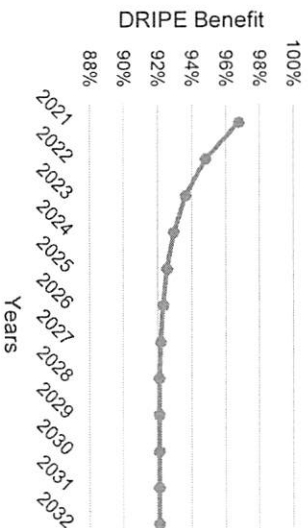
DRIPE benefits decay based on year of install

Year	2021	2022	2023	2024	2025
2021	93%	92%	90%	89%	89%
2022	91%	90%	89%	88%	88%
2023	89%	87%	86%	85%	85%
2024	87%	85%	84%	83%	83%
2025	85%	83%	82%	81%	81%
2026	83%	81%	80%	79%	79%
2027	80%	78%	77%	76%	76%
2028	78%	76%	75%	74%	74%
2029	75%	74%	73%	72%	72%
2030	55%	55%	55%	55%	55%
2031	38%	38%	38%	38%	38%
2032	0%	0%	0%	0%	0%
2033	0%	0%	0%	0%	0%
2034	0%	0%	0%	0%	0%
2035	0%	0%	0%	0%	0%
2036	0%	0%	0%	0%	0%

Existing generating resources respond to lower prices by becoming less efficient.



Customers respond to lower energy prices by increasing demand.



# Capacity DRIPE: Calculation Methodology

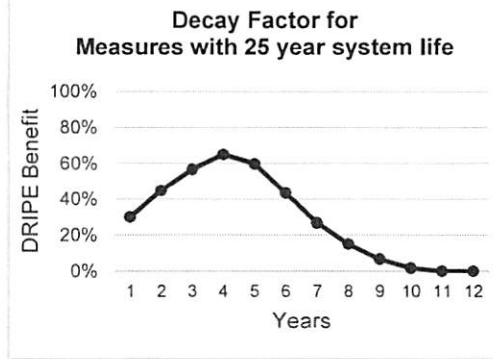


Uncleared  
Capacity  
DRIPE

=

New Hampshire's  
Zonal  
Unhedged Demand  
+ Reserves

×



×



**Archived:** Tuesday, May 24, 2022 10:40:36 AM  
**From:** Roberge, Griffin  
**Sent:** Wednesday, April 6, 2022 5:17:46 PM  
**To:** ~House Science Technology and Energy  
**Cc:** Carrie Morris; Kristin Grant; Kevin Avard; Tricia Melillo; Rebecca Perkins Kwoka; Cameron Lapine; Roberge, Griffin  
**Subject:** SB 259  
**Importance:** Normal

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Good morning:

I am following up on some questions that were asked during the public hearing on Senator Avard's SB 259, relative to the definition of "municipal host" for purposes of group net metering under the limited electrical energy producer act.

Representative McWilliams had asked who is working on the Value of Distributed Energy Resources (VDER) study and what it will encompass. Per the ongoing PUC net metering Docket DE 16-576, the NH Department of Energy (NHDOE) has retained a consultant, Dunsky Energy Consulting, to conduct that study. I have attached a copy of Dunsky's methodology overview for the VDER study that should provide some insight as to how the study is being conducted and what it is being examined. Page 9 of the slideshow gives a high-level view of the study's objectives. The study is not exclusively looking at other studies conducted in other states, but may reference them in the conduct of its study with primarily NH-centric data.

Representative Harrington questioned the inclusion of the term "quasi-public entity" in SB 259 on line 11. At the outset of the legislative session, there were two bills that sought to insert other entities under the definition of "political subdivision." Those two bills were SB 259 As Introduced and Senator Perkins Kwoka's SB 370-FN As Introduced. The Senate Energy and Natural Resources Committee later interim studied SB 370-FN and amended SB 259 to include the state of New Hampshire, housing authorities, quasi-public entities, and the Pease development authority under the definition of "political subdivision." As NHDOE noted, the phrase "quasi-public entity" is rather ambiguous and NHDOE would welcome additional clarity on what the phrase means as it is not defined elsewhere in state statute.

Representative Thomas asked if HB 315 has had enough time to work. For background, HB 315 was signed into law on August 26, 2021. The "municipal host" provisions in that bill came into effect upon signature. To date, there are four hydroelectric facilities that are registered as municipal hosts:

1. Salmon Falls River Hydro LLC located in Milton – 1.55 MWs
2. Cross Power Hydroelectric Station located in Berlin – 3.2 MWs
3. Gorham Hydro located in Gorham – 2.15 MWs
4. Jackman Hydro located in Hillsboro – 1.1 MWs

NHDOE cannot predict how many more municipal hosts will be registered in the future. Whether or not changes to the "political subdivision" definition are necessary to increase participation is a decision to be made by policymakers.

Representative Oxenham asked about the possibility of striking the language on lines 6-8 ("A municipal host shall be located in the same municipality as all group members if the facility began operation after January 1, 2021."). NHDOE is neutral on this potential change.

Please let me know if you have any questions.

Very best,

Griffin Roberge  
State Energy Program Manager  
NH Department of Energy  
Office: (603) 271-8341  
Cell: (207) 450-7792  
E-mail: [griffin.j.roberge@energy.nh.gov](mailto:griffin.j.roberge@energy.nh.gov)

David Holt

I support this bill



SB 259 - AS AMENDED BY THE SENATE

02/24/2022 0723s

2022 SESSION

22-2913

12/11

SENATE BILL **259**

AN ACT relative to the definition of "municipal host" for purposes of limited electrical energy producers.

SPONSORS: Sen. Avard, Dist 12; Sen. Watters, Dist 4; Sen. Bradley, Dist 3; Sen. Sherman, Dist 24; Sen. Perkins Kwoka, Dist 21; Sen. Whitley, Dist 15; Sen. Rosenwald, Dist 13; Sen. Hennessey, Dist 1; Sen. Giuda, Dist 2; Sen. Prentiss, Dist 5; Sen. Soucy, Dist 18; Rep. Egan, Graf. 2; Rep. Berry, Hills. 44

COMMITTEE: Energy and Natural Resources

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AMENDED ANALYSIS

This bill amends the definition of "political subdivision," as used in the definition of a "municipal host."

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Explanation: Matter added to current law appears in ***bold italics***.  
Matter removed from current law appears ~~[in brackets and struckthrough.]~~  
Matter which is either (a) all new or (b) repealed and reenacted appears in regular type.

STATE OF NEW HAMPSHIRE

*In the Year of Our Lord Two Thousand Twenty Two*

AN ACT                    relative to the definition of "municipal host" for purposes of limited electrical energy producers.

*Be it Enacted by the Senate and House of Representatives in General Court convened:*

1            1 Limited Electrical Energy Producers Act; Definitions. Amend RSA 362-A:1-a, II-c to read as  
2 follows:

3            II-c. "Municipal host" means a customer generator with a total peak generating capacity of  
4 greater than one megawatt and less than 5 megawatts used to offset the electricity requirements of a  
5 group consisting exclusively of one or more customers who are political subdivisions, provided that  
6 all customers are located within the same utility franchise service territory. A municipal host shall  
7 be located in the same municipality as all group members if the facility began operation after  
8 January 1, 2021. A municipal host may be owned by either a public or private entity. For this  
9 definition, "political subdivision" means ***the state of New Hampshire or*** any city, town, county,  
10 school district, chartered public school, village district, school administrative unit, ***housing***  
11 ***authority, or quasi-public entity, the Pease development authority,*** or any district or entity  
12 created for a special purpose administered or funded by any of the above-named governmental units.

13            2 Effective Date. This act shall take effect 60 days after its passage.