Parker Stacy
1 Kinsman Lane
Greenwich, CT 06830
Telephone: 203-869-8830
e-mail: pstacy@optonline.net

September 21, 2015

Melanie Bachman
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain CT 06051

Attention: Ms. Bachman and members of the Siting Council

Re: Docket 461A Pre-Hearing Interrogatory

I have been granted intervenor status in the above-referenced matter. In this capacity I am including five emails showing correspondence with the Siting Council and with Eversource:

- 5/17/17 Email #1 to Siting Council Objection to Eversource's Petition for Reconsideration
- 5/17/17 Email #2 to Siting Council from Tesla's Amer Hawari with two attachments

- 7/7/17 Email #1 re: Tesla to Eversource's Shanley and Gagnon
- 7/7/17 Email #2 re: Tesla to Eversource's Shanley and Gagnon – same as 5/17/17 Email #2 above
- 7/7/17 Email #3 re: Tesla to Eversource's Shanley and Gagnon with three attachments and links to two videos:

Attachments:
- Powerpack Green Mountain Power pdf
- Powerpack Southern California Energy pdf
- Powerpack + Solar Connecticut Municipal Electric Energy Coop pdf

Video links:
- Southern California Energy Bloomberg and Tesla video links

In asking for reconsideration of their original Petition on Docket #461 Eversource has again come up with potentially inefficient, soon-to-be obsolete and very expensive technology to solve a problem that is not imminent. Although the summer of 2016 was the hottest on record electricity demands on Eversource did not come close to capacity.

These emails, attachments and links show that there are new ways of approaching the issue of capacity which have the potential for significant savings. One example of the new approaches is being taken by Tesla. (*See 5/17/17 Email #s 1 & 2*.) They have undertaken several projects including the one for a Vermont utility, Green Mountain Power; one for Southern California Edison; and one for a different Connecticut utility, the Connecticut Municipal Electric Energy Cooperative. (*See 7/7/17 Email # 3.*)

The initial information was passed along to all Eversource parties by Lisa Fontaine of the Siting Council on May 18, 2017, and in turn re-sent by me along with additional information provided by Tesla to Eversource's Shanley and Gagnon on 7/7/17 (*See 7/7/17 Email #s 1, 2 & 3.*)

Repeating comments in 7/7/17 Email #1, in his shareholder letter in Eversource's 2016 annual report James J. Judge, President and Chief Executive Officer, wrote about the **"…company's commitment to a sustainable energy future for our region", and called Eversource "…the catalyst for change and opportunity in New England."**

Tesla, and perhaps other similar sustainable approaches, may offer an opportunity for Eversource to demonstrate exactly the commitment and characteristics Mr. Judge described. And, I and others believe a low-cost, forward-looking "green" approach to the power distribution needs in Greenwich would be more popular locally. Since Lisa Fontaine's emailing on May 18, 2017, Eversource has had contact information obtained from Tesla and an indication of Tesla's desire to review their possibilities for Greenwich. To the best of my knowledge no one has contacted Tesla's representative, Mr. Amer Hawari.

Prehearing Interrogatory for Eversource:

Will Eversource suspend their efforts toward these two new costly and disruptive proposals and instead explore low-cost, non-disruptive "green" alternatives which a project with a supplier such as Tesla might offer?

Sincerely,

Parker Stacy

Attachments: See above

From: Parker Stacy <pstacy@optonline.net>
Sent: Wednesday, May 17, 2017 5:49:23 PM
To: Bachman, Melanie
Subject: Objection to Eversource's Petition for Reconsideration of Greenwich Substation

Director Bachman, members of the Siting Council:

As an Intervenor I am registering my objection to the Eversource petition for reconsideration of a Greenwich Substation.

Eversource has again come up with potentially inefficient, soon-to-be obsolete and very expensive technology to solve a problem that is not imminent. Although the summer of 2016 was the hottest on record electricity demands on Eversource did not come close to capacity.

There are new ways of approaching the issue of capacity which have the potential for massive savings.

One example of the new approaches was very much in evidence in the press at the end of last week. CNBC reported a deal Tesla did with a Vermont utility to help them avoid costly infrastructure upgrades. Here is a copy of the online article. There are two parts to the program: Powerpacks for utilities and Powerwalls for homes. As you will see, the dollars are much smaller - $1500 per home for a Powerwall, plus the cost of the Powerpack batteries for the utility.

I can't imagine the total cost of overcoming the current perceived electrical shortfall using the Tesla approach would be anywhere near the $80,000,000 or $100,000,000 which Eversource is ready to spend and which will be borne by ratepayers everywhere.

And, their approach would entail little or no disruption to the proposed areas to be affected by the current Eversource approach.

I spoke with a representative of Tesla and am forwarding his email to you. His question: who should I contact at Eversource?

Here is the article:

CNBC: Tesla does deal with Vermont utility to reduce electricity bills with Tesla batteries

- Tesla signed a deal with Vermont's largest utility Green Mountain Power.
- The utility hopes the deal will reduce peak load electricity costs.
- The fee will be $15 per month, or one-time $1,500 charge, for 10-year plan.

Robert Ferris | @RobertoFerris
Friday, 12 May 2017 | 1:12 PM ET
Tesla has signed another deal with a utility, partnering with a Vermont utility to offer customers backup electricity for a fee.

The California-based sustainable energy company will install several of its nearly 4,000-pound Tesla Powerpack battery units on utility land, and offer the much-smaller Powerwall battery packs for up to 2,000 individual customers. The deal is the latest with utilities in the United States and abroad.
Vermont utility Green Mountain Power delivers electricity to three-quarters of the state's population. For a monthly fee of $15, or a one-time $1,500 fee, customers will receive backup power to their home for next 10 years, Tesla said. (Ten years is the warranty period during which Tesla guarantees their advertised performance level.)
At the end of the program, Tesla will take back the batteries, said Green Mountain Power spokeswoman Kristin Carlson.
Further deals may be in the works.
"Obviously, we are looking to grow this program," Carlson said, "because we see this as our new energy future."
Tesla said the batteries will eliminate the need for traditional, manually controlled, and fossil-fuel burning, backup generators.
Green Mountain expects the electricity batteries will also allow the utility to reduce peak energy load by 10 megawatts, the equivalent to taking 7,500 homes off the grid.
This will allow the utility to more cheaply meet the highest levels of demand — often on hot days when homes and businesses run air conditioners.
"There is a time, usually in the summer when there is peak energy use, and that is when energy is most expensive," Carlson said. "So anything we can do to lower that will save money for customers."
Green Mountain Power also plans to dispatch electricity aggregated from the batteries into New England's wholesale electricity markets when not needed by its own customers. Carlson said this will result in further savings for Green Mountain customers.
Tesla has done energy storage deals with utilities in such places as Connecticut, California, Hawaii and the U.K.
Please give this your consideration when you decide whether to grant Eversource's Petition.
Sincerely
Parker Stacy, Intervenor

Second email follows.

From: Parker Stacy <pstacy@optonline.net>
Sent: Wednesday, May 17, 2017 5:56:04 PM
To: Bachman, Melanie
Subject: FW: Tesla: Amer Hawari

Director Bachman, Members of the Siting Counsel:

Here is an email with attachments and contact information which I received from the Tesla representative with whom I spoke and who would very much like to discuss their approach with an Eversource representative.

Sincerely,
Parker Stacy, Intervenor

From: Amer Hawari [mailto:ahawari@tesla.com]
Sent: Tuesday, May 16, 2017 6:58 PM
To: pstacy@optonline.net
Subject: Tesla: Amer Hawari

Amer Hawari | **Inside Sales Advisor** | Tesla Energy

444 De Haro St. Suite 101 | San Francisco, CA 94107

p 650.963.5154 | c 510.926.1610 | e ahawari@tesla.com

From: Amer Hawari
Sent: Tuesday, May 16, 2017 3:56 PM
To: 'Pstacey@optonline.net' <Pstacey@optonline.net>
Subject: Tesla: Amer Hawari

My contact information is below, the best number to reach me at is my mobile 510-926-1610.

Amer Hawari | **Inside Sales Advisor** | Tesla Energy

444 De Haro St. Suite 101 | San Francisco, CA 94107

p 650.963.5154 | c 510.926.1610 | e ahawari@tesla.com

The content of this message is the proprietary and confidential property of Tesla Inc, and should be treated as such. If you are not the intended recipient and have received this message in error, please delete this message from your computer system and notify me immediately by reply e-mail. Any unauthorized use or distribution of the content of this message is prohibited. Thank you.

Please consider the environment before printing this email.

POWERPACK

TESLA COMMERCIAL BATTERY

Tesla has been building integrated battery systems in cars for over 10 years. The same degree of expertise, quality control and technological innovation has informed our process of developing high-performance energy storage systems. Powerpack 2 offers commercial and utility customers a turn-key energy storage solution to maximize on-site clean power and energy savings. The Powerpack system scales to the space, power and energy requirements of any site from 210 kWh to 100 MWh+.

Powerpack System Includes a Bi-Directional Inverter and DC Battery Packs

FULLY INTEGRATED SYSTEM

A complete energy storage system including DC batteries, bi-directional inverter, and a Powerpack controller with intelligent software. This turnkey system is designed to maximize savings and prolong battery life.

OPTIMIZATION SOFTWARE

Powerpack systems have the most advanced battery technology and dispatch optimization software to quickly learn and predict a facility's energy patterns. Tesla's proprietary storage dispatch software can charge and discharge autonomously to maximize customer value.

ENHANCED SYSTEM SAFETY

Powerpack's battery architecture consists of a low voltage battery with a DC/DC converter for added electrical isolation and safety. It also has an integrated liquid cooling / heating system for thermal safety and enhanced performance and reliability.

APPLICATIONS

PEAK SHAVING

Discharge at times of peak demand to reduce expensive demand charges

EMERGENCY BACKUP

Powers a facility when the grid goes down

CAPACITY FIRMING

Smooth out the intermittency of renewables by storing and dispatching when needed

LOAD SHIFTING

Shift energy consumption from one point in time to another

MICROGRID

Build a localized grid that can disconnect from the main power grid

TRANSMISSION & DISTRIBUTION SUPPORT

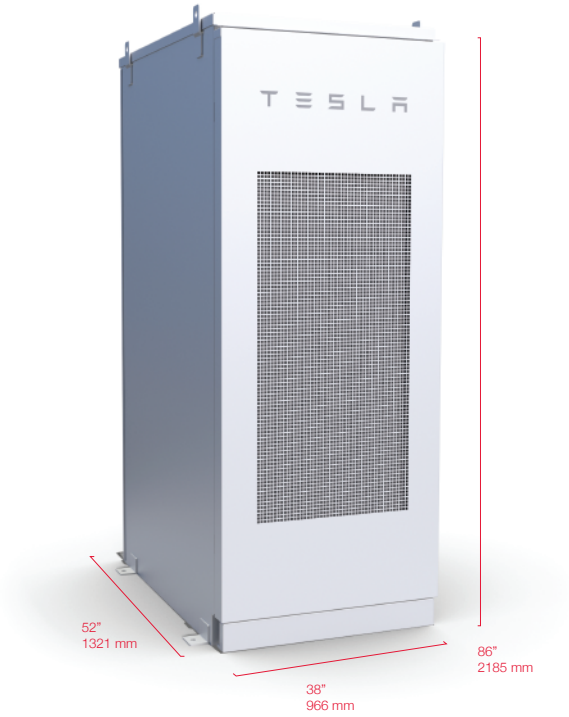
Supply power at a distributed location to defer the need to upgrade aging infrastructure

DEMAND RESPONSE

Discharge or charge in response to signals from a demand response administrator

ANCILLARY SERVICES

Provide service to the grid in response to signals sent



POWERPACK DETAILS:

1 Powerpack includes 16 individual battery pods

Each pod has an isolated DC/DC inverter and thermal control system

Sensors to monitor cell-level performance in real-time

POWERPACK 2 SPECIFICATIONS

MECHANICAL AND MOUNTING

Enclosure	IP67 (Pod) NEMA 3R / IP35 (Powerpack) NEMA 4 / IP66 (Inverter)
Powerpack Weight	1622 kg / 3575 lbs
Powerpack Dimensions	L: 51.5" (1308mm) W: 32.4" (822mm) H: 86" (2185mm)
Powerpack Area Requirements	50kW / 210kWh: 95ft^2 / 8.9m^2 100kW / 420kWh: 127ft^2 / 11.8m^2 250kW / 1050kWh: 221ft^2 / 20.5m^2 500kW / 2100kWh: 377 ft^2 / 35m^2
Inverter Dimensions	L: 39.9" (1014mm) W: 49.4" (1254mm) H: 86.3" (2192mm)
Operating Ambient Temperature	-13°F to 122°F / -30°C to 50°C
Installation	Requires a crane Unit ships on removable 130mm tall pallet

COMMUNICATIONS

Protocol	Modbus TCP DNP3 Rest API

SYSTEM SPECIFICATIONS

ELECTRICAL

AC Voltage	480VAC 3-phase 400VAC 3-phase
System Availability	50 Hz, 60 Hz
System Sizes	Scalable from 50kW - 500kW
Continuous Power Duration	4 hours
System Efficiency @ C/4	89% Roundtrip*

*Net energy delivered at 25°C (77°F) ambient temperature including thermal control.

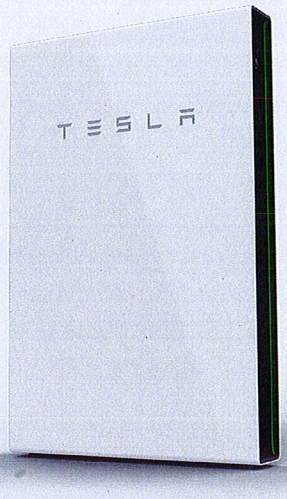
REGULATORY

Lithium-Ion Cells	NRTL listed to UL 1642
System	NRTL listed to UL 1973, 9540, 1741 IEEE 1547 Compliant to grid codes and safety standards of all major markets. The full list can be provided upon request.

POWERWALL

Tesla Powerwall 2 is a fully-integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, load shifting, backup, and off-grid use.

Powerwall's electrical interface provides a simple connection to any home or building. Its revolutionary compact design achieves market-leading energy density and is easy to install, enabling owners to quickly realize the benefits of reliable, clean power.



PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	208 V, 220 V, 230 V, 100/200 V, 120/240 V
Feed-In Type	Single & Split Phase
Grid Frequency	50 and 60 Hz
Total Energy[1]	14 kWh
Usable Energy[1]	13.5 kWh
Real Power, max continuous[2]	5 kW (charge and discharge)
Real Power, peak (10 s)[2]	7 kW (discharge only)
Apparent Power, max continuous[2]	5.8 kVA (charge and discharge)
Apparent Power, peak (10 s)[2]	7.2 kVA (discharge only)
Imbalance for Single-Phase Loads	100%
Power Factor Output Range	+/– 1.0 adjustable
Power Factor (full-rated power)	+/– 0.85
Depth of Discharge	100%
Internal Battery DC Voltage	50 V
Round Trip Efficiency[1,3]	> 90%
Warranty	10 years

[1]Values provided for 25°C (77°F), 3.3 kW charge/discharge power.
[2]Values region-dependant.
[3]AC to battery to AC, at beginning of life.

COMPLIANCE INFORMATION

Safety	UL 1642, UL 1741, UL 1973, UL 9540, UN 38.3, IEC 62109-1, IEC 62619, CSA C22.2.107.1
Grid Standards	Worldwide Compatibility
Emissions	FCC Part 15 Class B, ICES 003, EN 61000 Class B
Environmental	RoHS Directive 2011/65/EU, WEEE Directive 2012/19/EU, 2006/66/EC
Seismic	AC156, IEEE 693-2005 (high)

MECHANICAL SPECIFICATIONS

Dimensions	1150 mm x 755 mm x 155 mm (45.3 in x 29.7 in x 6.1 in)
Weight	125 kg (276 lbs)
Mounting options	Floor or wall mount

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	–20°C to 50°C (–4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Altitude	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R
Ingress Rating	IP67 (Battery & Power Electronics) IP56 (Wiring Compartment)
Noise Level @ 1m	< 40 dBA at 30°C (86°F)

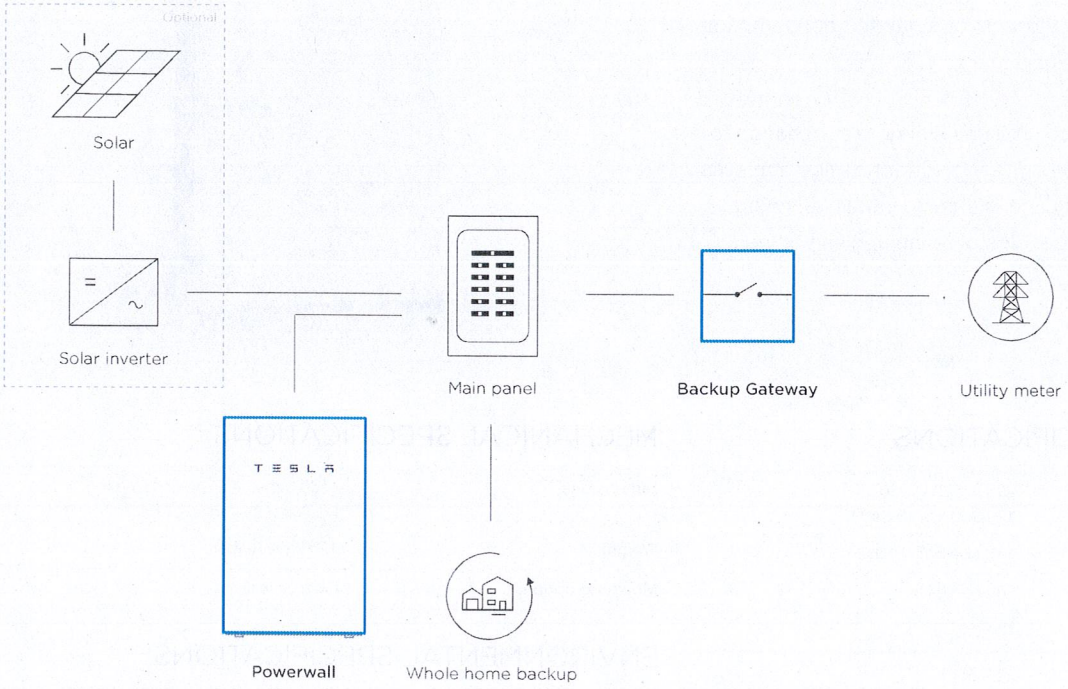
BACKUP GATEWAY SPECIFICATIONS

Dimensions	691 mm x 378 mm x 129 mm (27.2 in x 14.9 in x 5.1 in)
Weight	16.4 kg (36 lbs)
Disconnect Current	200 A
Enclosure Type	NEMA 3R
Ingress Rating	IP44
Overcurrent Protection Breaker[4]	100–200 A
User Interface	Tesla App
Connectivity	Wi-Fi, Ethernet, 3G[4]
AC Meter	Revenue grade
Operating Modes	Support for solar self-consumption, load shifting, backup, and off-grid use
Backup Operation	Automatic disconnect for seamless backup transition
Modularity	Supports up to 10 AC-coupled Powerwalls

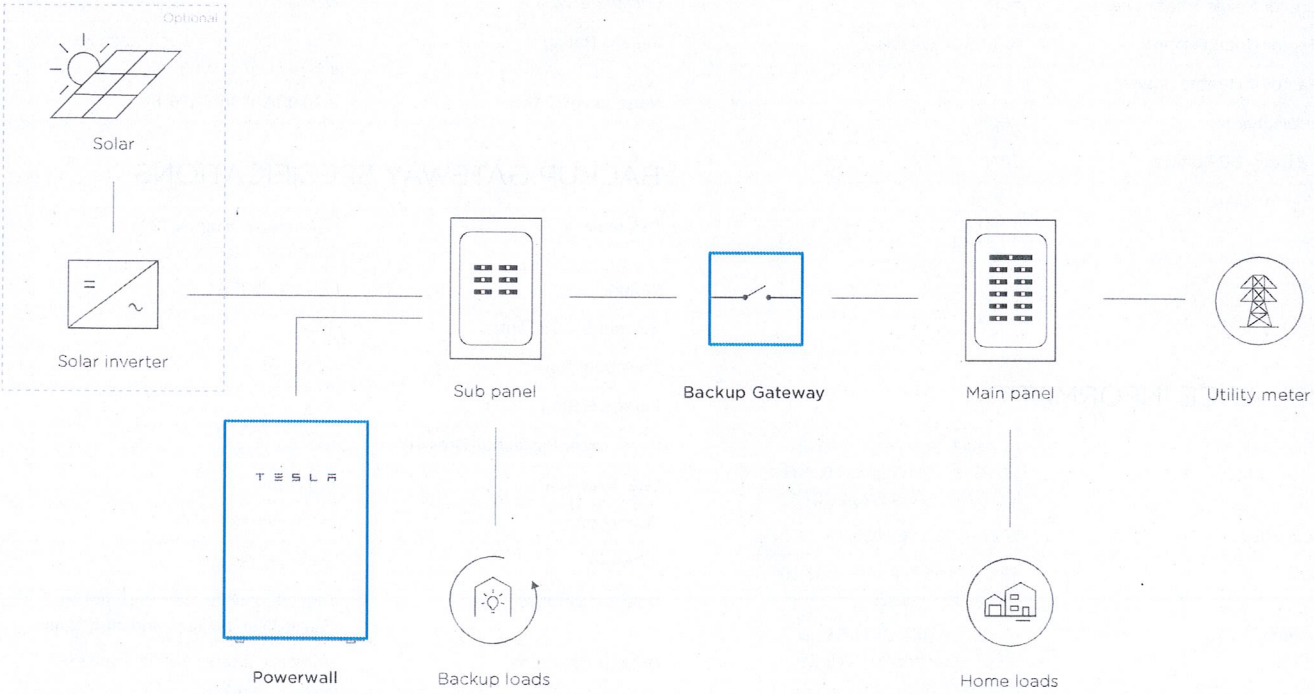
[4]Optional

TYPICAL SYSTEM LAYOUTS

WHOLE HOME BACKUP



PARTIAL HOME BACKUP



From: Parker Stacy [mailto:pstacy@optonline.net]
Sent: Friday, July 07, 2017 9:32 AM
To: 'Kathleen Shanley'; 'Raymond Gagnon'
Cc: Bachman, Melanie
Subject: FW: Comments of Morgan and Parker Docket #461 Petition for Reconsideration

Email #1 of 3

Ms. Shanley and Mr. Gagnon:

Re: CT Siting Council Docket #461A Eversource Petition for Reconsideration

I am an Intervenor in the above matter. I am writing to you in that capacity because you appear to be Eversource Energy operations personnel on the June 15, 2017 Docket 461A Service List.

In May I sent comments to the Siting Council which you received in the email below. Briefly, it had come to my attention that Tesla has installed their Powerpack and Powerwall batteries in cooperation with a Vermont utility, thereby avoiding the expensive, disruptive and unpopular infrastructure project envisioned for Greenwich by Eversource. I received and forwarded an email from Tesla's Amar Hawari, their Senior Inside Sales Advisor, with attachments describing the Powerpack and Powerwall batteries, and including his contact information, to the Siting Council. I do not know if they in turn forwarded it to you so I am doing so now in a second email (#2).

Subsequently I received another email from Mr. Hawari. It contains attachments describing some of the projects undertaken by Tesla including the one for the Vermont utility, Green Mountain Power; one for Southern California Edison; and one for a different Connecticut utility, the Connecticut Municipal Electric Energy Cooperative. The email also contains links to two videos about their projects. I am forwarding this in a third email (#3).

In his shareholder letter in Eversource's 2016 annual report James J. Judge, your President and Chief Executive Officer, wrote about your "…company's commitment to a sustainable energy future for our region", and called Eversource "…the catalyst for change and opportunity in New England." Tesla, and perhaps other similar sustainable approaches, may offer an opportunity for Eversource to demonstrate exactly the commitment and characteristics Mr. Judge described. And, I and others believe a low-cost, forward-looking "green" approach to the power distribution needs in Greenwich would be more popular locally.

As a first step, if you have not already done so, I urge you to contact Mr. Hawari of Tesla.

Sincerely,
Parker Stacy
Intervenor

From: Fontaine, Lisa [mailto:Lisa.Fontaine@ct.gov]
Sent: Thursday, May 18, 2017 11:56 AM
To: Anthony Crudele <bellanonnagreenwich@gmail.com>; Anthony Fitzgerald <afitzgerald@carmodylaw.com>; Carissa Depetris <carissa.depetris@gmail.com>; Ceci Morgan

<cecimorgan@aol.com>; Christine Edwards <SeeEdwards@aol.com>; dball@cohenandwolf.com; Dwigh Ueda <d_ueda@yahoo.com>; Edward Marcus <emarcus@marcuslawfirm.com>; Greenwich Chiropractic & Nutrition <drdaniellelluzzo@gmail.com>; Jeffery Cochran (jeffery.cochran@eversource.com) <jeffery.cochran@eversource.com>; Joel Paul Berger <communityrealty@msn.com>; Julie Donaldson Kohler (jkohler@cohenandwolf.com) <jkohler@cohenandwolf.com>; Kathleen Shanley <kathleen.shanley@eversource.com>; Bidra, Lauren <Lauren.Bidra@ct.gov>; Marianne Dubuque <mdubuque@carmodylaw.com>; Mark Bergamo <mbergamo@marcuslawfirm.com>; Meg Glass <glass50@hotmail.com>; P. Jude Collins <mail@morningsidecircle.org>; Parker Stacy <pstacy@optonline.net>; Peter Tesei <ptesei@greenwichct.org>; Raymond Gagnon <raymond.gagnon@eversource.com>; Richard Granoff <rg@granoffarchitects.com>; Rosenthal, Joseph A <Joseph.Rosenthal@ct.gov>
Cc: CSC-DL Siting Council <Siting.Council@ct.gov>
Subject: Comments of Morgan and Parker Docket #461 Petition for Reconsideration

Attached please find comments from Cecilia Morgan and from Parker Stacy on the DO461 Petition for Reconsideration.

From: ceci morgan <cecimorgan@aol.com>
Sent: Wednesday, May 17, 2017 10:56:05 AM
To: Bachman, Melanie
Cc: cecimorgan@aol.com
Subject: Docket #461 Petition for Reconsideration

Dear Ms. Bachman,
Attached is my letter regarding Docket #461 Petition for Reconsideration.
Cecilia Morgan

From: Parker Stacy [mailto:pstacy@optonline.net]
Sent: Friday, July 07, 2017 9:33 AM
To: 'Kathleen Shanley'; 'Raymond Gagnon'
Cc: Bachman, Melanie
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Email #2 of 3

Ms. Shanley and Mr. Gagnon:

Re: CT Siting Council Docket #461A Eversource Petition for Reconsideration

From: Parker Stacy [mailto:pstacy@optonline.net]
Sent: Wednesday, May 17, 2017 5:56 PM
To: melanie.bachman@ct.gov
Subject: FW: Tesla: Amer Hawari

Director Bachman, Members of the Siting Counsel:

Here is an email with attachments and contact information which I received from the Tesla representative with whom I spoke and who would very much like to discuss their approach with an Eversource representative.

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Sent: Tuesday, May 16, 2017 6:58 PM
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Amer Hawari | Inside Sales Advisor | Tesla Energy
444 De Haro St. Suite 101 | San Francisco, CA 94107
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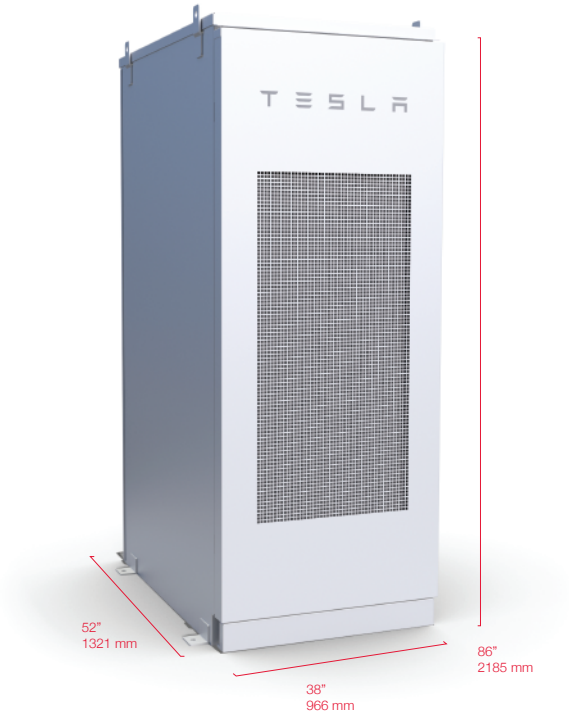

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Protocol	Modbus TCP DNP3 Rest API

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AC Voltage	480VAC 3-phase 400VAC 3-phase
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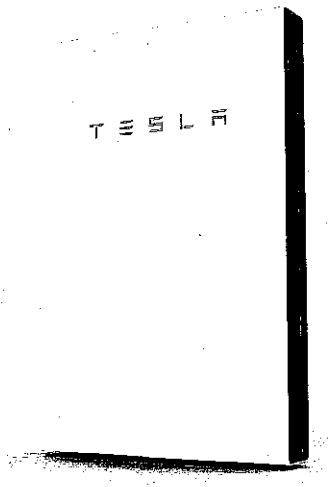

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Real Power, peak (10 s)[2]	7 kW (discharge only)
Apparent Power, max continuous[2]	5.8 kVA (charge and discharge)
Apparent Power, peak (10 s)[2]	7.2 kVA (discharge only)
Imbalance for Single-Phase Loads	100%
Power Factor Output Range	+/– 1.0 adjustable
Power Factor (full-rated power)	+/– 0.85
Depth of Discharge	100%
Internal Battery DC Voltage	50 V
Round Trip Efficiency[1,3]	> 90%
Warranty	10 years

[1]Values provided for 25°C (77°F), 3.3 kW charge/discharge power.
[2]Values region-dependent.
[3]AC to battery to AC, at beginning of life.

COMPLIANCE INFORMATION

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Grid Standards	Worldwide Compatibility
Emissions	FCC Part 15 Class B, ICES 003, EN 61000 Class B
Environmental	RoHS Directive 2011/65/EU, WEEE Directive 2012/19/EU, 2006/66/EC
Seismic	AC156, IEEE 693-2005 (high)

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Operating Temperature	–20°C to 50°C (-4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Altitude	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R
Ingress Rating	IP67 (Battery & Power Electronics) IP56 (Wiring Compartment)
Noise Level @ 1m	< 40 dBA at 30°C (86°F)

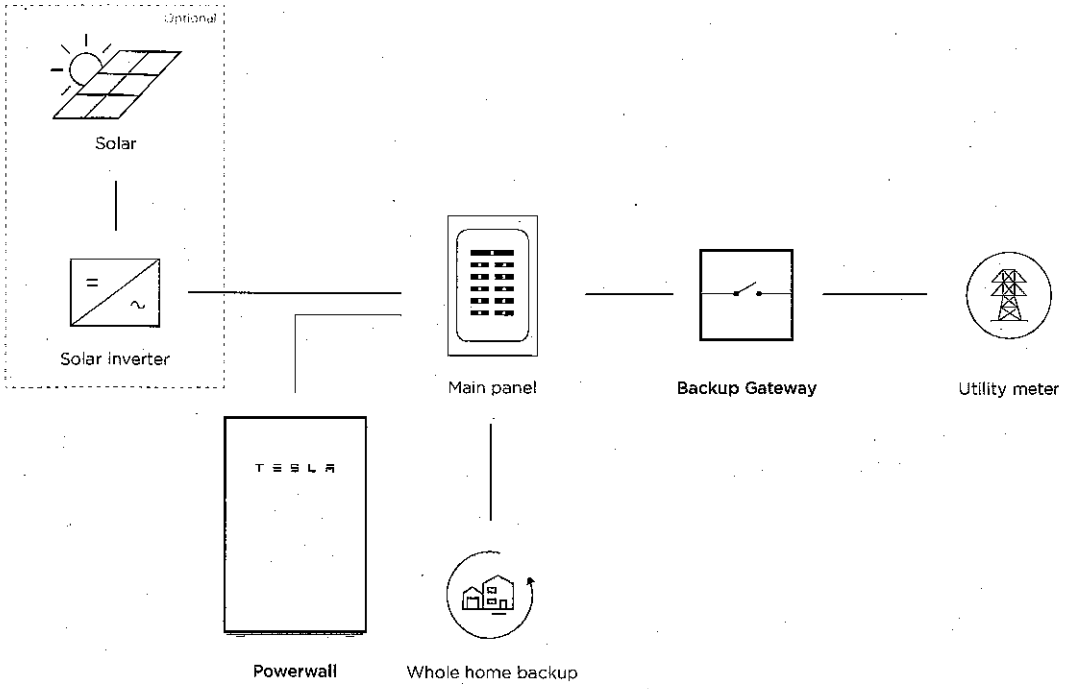
BACKUP GATEWAY SPECIFICATIONS

Dimensions	691 mm x 378 mm x 129 mm (27.2 in x 14.9 in x 5.1 in)
Weight	16.4 kg (36 lbs)
Disconnect Current	200 A
Enclosure Type	NEMA 3R
Ingress Rating	IP44
Overcurrent Protection Breaker[4]	100–200 A
User Interface	Tesla App
Connectivity	Wi-Fi, Ethernet, 3G[4]
AC Meter	Revenue grade
Operating Modes	Support for solar self-consumption, load shifting, backup, and off-grid use
Backup Operation	Automatic disconnect for seamless backup transition
Modularity	Supports up to 10 AC-coupled Powerwalls

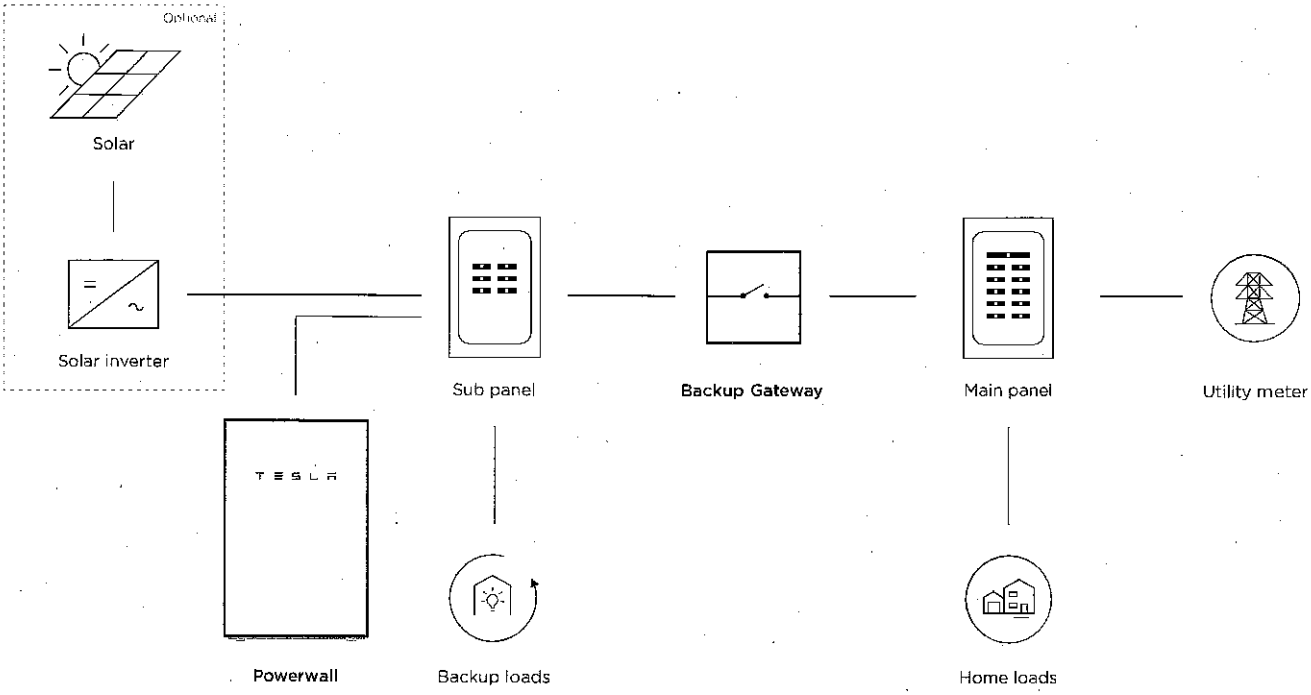
[4]Optional

TYPICAL SYSTEM LAYOUTS

WHOLE HOME BACKUP



PARTIAL HOME BACKUP



From: Parker Stacy [mailto:pstacy@optonline.net]
Sent: Friday, July 07, 2017 9:32 AM
To: 'Kathleen Shanley'; 'Raymond Gagnon'
Cc: Bachman, Melanie
Subject: FW: Voice Mail Response

Email #3 of 3

Ms. Shanley and Mr. Gagnon:

Re: CT Siting Council Docket #461A Eversource Petition for Reconsideration

From: Amer Hawari [mailto:ahawari@tesla.com]
Sent: Tuesday, June 20, 2017 5:35 PM
To: pstacy@optonline.net
Subject: Voice Mail Response

Stacey,

I got your voicemail, sorry I am out of the office today but put together something for you that may help. There are a few case studies attached in a PDF and a couple videos of projects we have done.

Kauai Video
Southern California Edison Video

Regarding Eversource, thank you for passing along the information to them, but unfortunately, I have not heard from anyone over there.

Thanks so much

Amer Hawari | **Sr. Inside Sales Advisor |** Tesla Energy
444 De Haro St. Suite 101 | San Francisco, CA 94107
p 650.963.5154 | c 510.926.1610 | e ahawari@tesla.com

CONNECTICUT ENERGY COOPERATIVE

SOLAR SAVINGS

"Connecticut Municipal Electric Energy Cooperative focus is on energizing customers and community prosperity, so we are excited to help create clean, reliable and locally based power resources. These systems utilize leading edge technology that is both powerful and fiscally responsible."
Drew Rankin, CMEEC Chief Executive Officer

OPPORTUNITY

The Connecticut Municipal Electric Energy Cooperative (CMEEC) provides electric services to several Connecticut municipal utilities, which in turn provides electricity to roughly 70,000 residential, commercial and small business customers throughout the state. CMEEC's vision is to energize customers and community prosperity by delivering sustained low-cost energy. As a vertically integrated co-op, CMEEC and their customers manage a comprehensive portfolio of generation, transmission, distribution and supply portfolios that must deliver reliable, low cost power.

SOLUTION

Solar power and energy storage combine to reduce load and capacity charges. To achieve its sustainability goals, CMEEC worked with Tesla to develop 15 MW (AC) of solar PV across five sites and connected a Powerpack system to ensure solar is available to meet the community's peak electricity demands.

RESULTS

Under a 20-year solar power purchase agreement (PPA), Tesla built, financed, and now owns, operates and maintains the solar systems. The PPA enables CMEEC to purchase power generated by the system without the burden of traditional asset ownership. The Powerpack is used to store solar energy produced during off-peak hours and later discharge this energy at times when CMEEC's load is peaking. The storage component of the project was contracted under a 10-year PPA.

Customer
Connecticut Municipal Electric Energy Cooperative

Location
Norwich, CT

Project size
15 MW PV
1.5 MW / 6 MWh storage

Applications
Demand reduction
CO^2 emission reduction

Commissioned
2017

Tesla, Inc.'s wholly owned subsidiary, SolarCity Corporation, performs Powerpack installation projects. CT HIC 0632778, ELC 0125305. View our full list of contractor licenses online.

POWERPACK 2

FIRST U.S. UTILITY TO SELL POWERWALLS

"This is all about delivering on what our customers need to move away from the antiquated, bulk power system to one that is cleaner and more reliable, where we generate power closer to where it's used."
Mary Powell, President and CEO, Green Mountain Power

OPPORTUNITY

Green Mountain Power (GMP) is a utility in VT that serves 265,000 people and is continually innovating to deliver cost effective, low carbon and reliable energy solutions to its customers. Powerwall empowers customers to become more energy independent while also allowing GMP to aggregate the systems to reduce peak demand and generate savings.

SOLUTION

GMP purchased 500 Powerwalls offering them to their customer base either through a $37.50/month lease with no upfront cost and sharing access with GMP or an option to purchase Powerwall outright with sharing access. Through the purchase and sharing model, a customer will receive a monthly bill credit of $31.76.

GMP can discharge the Powerwalls during times of high market prices to help lower its energy costs and times of peak load to help reduce significant capacity and transmission expenses.

RESULTS

- Reduction in transmission and distribution (T&D) costs
- Reduce peak demand
- Backup power during a winter outage, which typically lasts 2.5 hours
- A leader in creating a sustainable energy future

Customer
Green Mountain Power

Location
Homes across Vermont

System size
1.6 MW / 3.2 MWh

Applications
Backup Power
Peak Shaving
Reduce T&D costs
Grid Stability

Commissioned
2016

POWERPACK 2

ENHANCES SOUTHERN CALIFORNIA ELECTRIC GRID RELIABILITY

"Southern California faces a number of energy reliability challenges — for electricity and for residential heating —all related to the loss of gas storage at Aliso Canyon. Now we're doing what we can to expedite the next generation of energy solutions." **President Michael Picker, CA Public Utilities Commission**

OPPORTUNITY

In response to the Aliso Canyon gas storage leak, the California Public Utilities Commission mandated an accelerated procurement for utility-scale storage solution that could be operational by December 31st, 2016. Through a competitive bidding process, Tesla was selected to provide a 20 MW/80 MWh Powerpack system at the Southern California Edison (SCE) Mira Loma substation. Tesla successfully installed the system in 3 months.

SOLUTION

Powerpack 2 is Tesla's next generation storage solution, which includes an integrated Tesla inverter. The system has been designed and engineered by Tesla to maximize safety, efficiency and energy density and has been rigorously tested to ensure it will perform reliably and provide critical energy to Southern California residents. In addition, Tesla provides a performance guarantee or a Capacity Maintenance Agreement (CMA) that ensures SCE will be able to utilize a certain amount of system energy each year.

RESULTS

SCE owns and operates the Powerpack system, which acts as a peaker plant when needed by providing multiple grid services. The primary application is to provide capacity and fast ramping capability when the natural gas system is contained, which results in greater grid reliability and smoother integration of renewable resources. SCE will also be able to bid the Powerpack system into the CA energy markets, which include ancillary services such as frequency regulation and spinning reserves. SvCE's SCADA system sends commands to the Powerpack Controller via the Modbus/DNP3 communication protocol. By stacking up multiple applications, a multi-hour Powerpack system becomes cost-competitive with a peaker plant.

Customer
Southern California Edison (SCE)

Location
Ontario, CA

System size
20MW / 80MWh

Applications
Grid Reliability Enhancement

Commissioned
2016
3 months from deployment to operation

Bloomberg video:

https://www.youtube.com/watch?v=6poH8-EmBko

Tesla Southern California Energy video:

https://www.youtube.com/watch?v=Hiu0fb0X3cg&feature=youtu.be