

VIA FEDEX

May 1, 2017

RE: **PETITION NO. 1296** - Bloom Energy Corporation, as an agent for Home Depot, petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the construction, operation and maintenance of a Customer-Side 200 Kilowatt Fuel Cell Facility and a 100 Kilowatt Auxiliary Battery Storage Facility to be located at the Home Depot building, 111 Universal Drive North, North Haven, Connecticut.

Dear Ms. Bachman,

We are submitting an original and fifteen (15) copies of the interrogatories response for Petition NO. 1296.

Sincerely,
Bloom Energy

A handwritten signature in black ink, appearing to read 'Justin Adams', with a stylized flourish at the end.

Justin Adams
justin.adams@bloomenergy.com
(860) 839-8373

Interrogatories
Petition No. 1296
Bloom Energy Corporation
Home Depot, Universal Drive North, North Haven, CT

1. Provide the certified mail receipts for all recipients that were provided notice including the abutting property owners, state agencies, and state and local public officials.

The certified mail receipts have been emailed to the Council to reduce the paper usage required to provide 16 copies.

2. The Petition describes 300-kW of power (nameplate) that would be provided to the building during operation of the fuel cell and two ABS batteries but the listed nameplate output of the fuel cell and two batteries is 350-kW. Please clarify.

The fuel cells and two ABS batteries provide output power at DC voltage to a 300kW inverter. The 300kW inverter limits AC output power to the Building at 300kW per its nameplate.

3. Over what time interval will the battery units fully discharge?
4. Over what time interval will the battery units fully recharge?

The answers for interrogatory 3 and 4 have been combined to explain the dynamic process of charging and discharging the batteries. 300 kWh of battery at a 96 kW max charge rate means you should be fully charged after 3.125 hours ($300 \text{ kWh} / 96 \text{ kW}$), assuming you are charging at full capacity. If, for example, you charge at a lower power rate, say 30 kW, it would take you 10 hours. So, the duration really depends on what the customer load does. If the customer load is high, we would prioritize sending power to the customer load and battery charging would be slower.

For discharge, we're paired with 200 kW Energy Server so the discharge rate is capped by the inverter capacity which is 300 kW. So, even though when you add 90 kW + 60 kW you get 150 kW, we wouldn't expect to discharge the batteries at 150 kW because we only have 100 kW capacity in our inverters. So, at max discharge rate, we would expect the battery to be fully empty within 3 hours ($300 \text{ kWh} / 100 \text{ kW}$). But, again, this depends on customer load. We would only discharge when it would be beneficial to the customer load (like when the customer load spikes during the day) and at whatever rate required by the customer – which might not be the full 100 kW. The discharge is not expected to happen in an even block.

The only degree of certainty on timing is that we are expected by the customer to fully charge the battery and discharge the battery within a 24 hour period. So, it would likely charge fully at night during off-peak hours and then discharge during the on-peak hours of the day.

5. Petition page 5 states 91 percent of the buildings power would be provided by the facility. Does this figure include the operation of the two battery units? What is the percent of power provided only during operation of the fuel cell?

The figure does not include the operation of the two battery units and is the percent of power provided by the fuel cell only. If one takes the values for a "300 kW" size per the interval data shown in Exhibit 4,

the proposed facility would account for 98% of the average baseload. It will likely be a little lower since the batteries cannot continuously support the peak load above 200kW.

6. Petition page 16 mentions outreach to the Town. Did the Town express any concerns during consultation? If so, please elaborate.

The Town provided Bloom with the approved site plans and recommended we use them as a baseline for calculating the balance of parking on the Site with the addition of the proposed facility. The prepared plans were provided to the Town in parallel with the filing of this petition. To date, the Town has not expressed any concerns with the proposed project.

7. Has Bloom consulted with the Town regarding the loss of parking spaces? Does Bloom intend to install replacement parking spaces?

Bloom has consulted with the Town regarding parking and Bloom does not intend to install replacement parking spaces.

8. Petition Exhibit 12 shows a noise value for the operation of the fuel cell alone. Please revise the noise analysis to include the operation of the two battery units.

The noise levels from the fuel cell are predicted to dominate noise levels from the Facility, and as such, noise emitted by the ABS will have a negligible impact. As far as the frequency spectrum is concerned for the ABS, it is similar to the fuel cell, but significantly quieter. Therefore, the ABS installation will not affect or require changes to the sound model presented in the petition.

9. The site plan does not depict a security fence around the facility. Are there any facility safety or security concerns? How would unauthorized access to the internal fuel cell components be deterred?

The Energy Server has redundant safety features and in-system checks to ensure personnel safety. While the actual fuel cells operate at high temperatures, these components do not move and are contained within many layers of insulation. It is safe to stand adjacent to the equipment as all moving parts and hot surfaces are protected by the locked outer panels. The Auxiliary Battery Systems are secured in place and doors are secured and locked. Only Bloom service personnel have the keys and can be on-site within 24 hours.

The parking area around the proposed location is monitored by security cameras mounted to the light poles and building. The Facility would also not be seen from any public roadways. Therefore Bloom does not have safety or security concerns.

10. Appendix B and Appendix C in Petition Exhibit 6 are missing. Please provide.

The following appendices have been emailed to the Council to reduce the paper usage required to provide 16 copies.

- Appendix B – Samsung Battery Spec & Handling
- Appendix C – Battery MSDS

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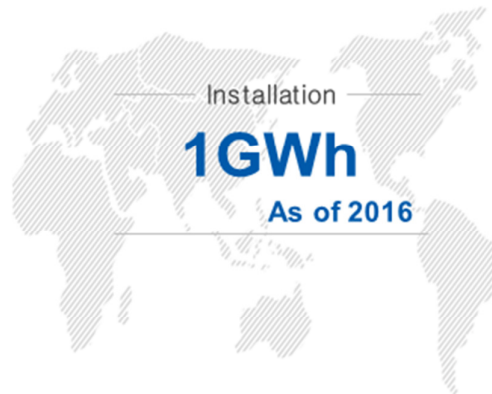
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APPENDIX B:
Samsung Battery Spec &
Handling

Mega E2 Specification & Handling



ESS Business Division

Samsung SDI

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1. Technical Specification of Battery System Components

1.1 Battery Cell (94Ah)

Samsung SDI's lithium ion energy storage system relies on advanced nickel cobalt manganese chemistry to provide a combination of high energy density, low cost, and industry leading safety. Since its entry into lithium ion battery production in 2000, SDI has maintained a zero-recall rate of its battery products. Configurable to serve the application at hand, 94 Ah prismatic cells form the core of SDI's energy storage solution.

Employing a state of the art Manufacturing Execution System (MES) tracking hundreds of factors across each stage of the manufacturing process, Samsung SDI is committed to delivering consistent, quality products. To ensure safety, each energy storage system contains redundant levels of both mechanical and software based safety systems to guard against potentially harmful situations. This commitment to safety starts at the battery cell level.

1.1.1 Specification

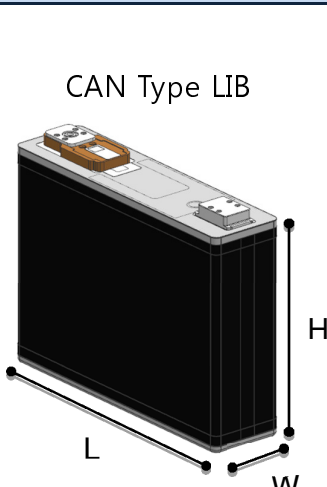
Battery Cell	Parameters	Spec
 <p>CAN Type LIB</p>	Shape	Prismatic
	Battery chemistry	NCM
	Dimension (L x W x H mm)	173.9 x 45.6 x 125.7
	Weight	2.090 kg
	Nominal capacity	94 Ah
	Nominal voltage (V)	3.68
	Nominal energy, Wh	345.9
	Operational voltage (V)	3.20 ~ 4.15
	Charging method	CC-CV

Table 6 94Ah Cell Specification

1.1.2 Safety Design in Cell

- Safety Function Layer : Maintain electrical separation even after polymer separator damage
- Positive polarity Aluminum CAN: Prevent surface corrosion resulting no electrolyte leakage even after long-term usage
- Overcharge Safety Device: Prevent current flow after activation of OSD
- Vent: Emit the generated gas effectively if the inside pressure goes abnormally high in abuse conditions
- Fuse: Cut the current path when abnormally high current flows

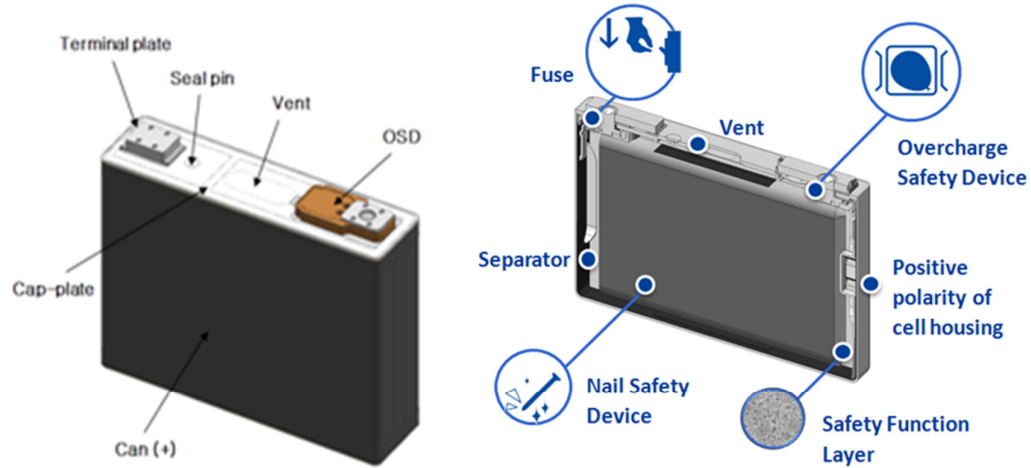


Figure 1 Safety Design of 94Ah Cell

1.2 Battery Module

Samsung SDI's energy storage systems employ a hierarchical modular design which allows for customized configurations, ease of maintenance, and future expansion capability. Modules, the basic building block of Samsung SDI ESS, are formed by configuring 22 of SDI's NCM cells in series. Module is connected with a battery management system (BMS) to form a rack mountable module assembly. Multiple module assemblies are then combined into a rack. Each rack contains rack-level BMS.


Module	Parameters	Specification
	Configuration	22S 1P
	Key component	22 cells, 1 Module BMS
	Dimension (L×W×H)	370 × 588 × 160 mm
	Weight	< 52.5 kg
	Nominal capacity	94 Ah
	Nominal energy	7.61 kWh (0.3C Rating)
	Nominal voltage	80.96 V
	Operating voltage	70.4 – 91.3 V
	Charging method (CC-CV)	4.15V/Cell, 31A, 3A cut off

Table 7 Module Specification

1.3 Switch Gear with Rack BMS (S/G)

Rack BMS has full function of measuring whole voltages and current for all cells in the RACK. It can protect batteries according to its own algorithm. Rack SOC and SOH are also automatically calculated and updated very precisely by Rack BMS.

The switches used in Switch Gear are cautiously chosen and experimented by SDI, which shows excellent performance of disconnecting. For safety, each string has serially connected fuse, which has enough margin over operating range and fast fusing characteristic for safety.

1.3.1 Specification

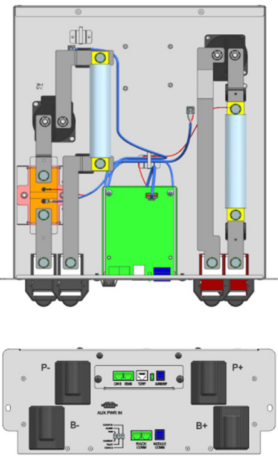
Switch Gear	Parameters	Specification
	Key component	Rack BMS DC contactor (2EA) DC Fuse (2EA) Voltage & Current sensing device
	Dimension (L x W x H mm)	370 X 418 X 160
	Aux Power IN (TBD)	24Vdc Aux input (Total 38W) - For DC Contactor Switch (2EA) (Max 29W, TYP 7W) - For Rack BMS (Max 6W, TYP 5W) - For System BMS(Max 3W, TYP 2.5W)
	Communication	UART up to 1.0Mbps (For Module BMS)
	Communication	CAN 2.0B 500kbps (For parallel Rack & System BMS)

Table 8 Switch Gear Specification

1.3.2 Mechanical Drawing

One string is combination of maximum 16 modules connected in serial to achieve high voltages

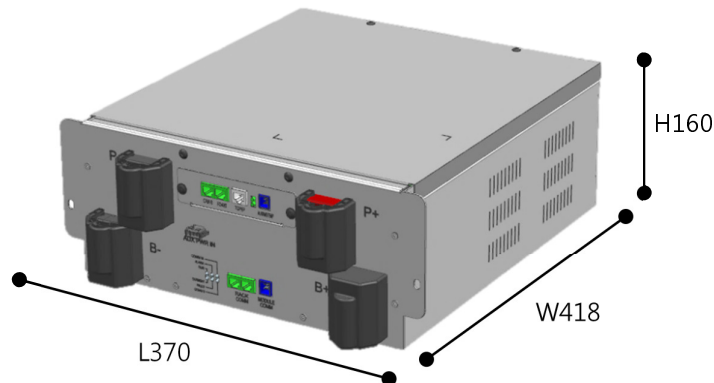


Figure 2 Switch Gear Drawing

1.4 System BMS

1.4.1 Specification

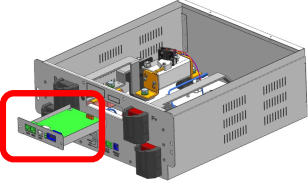
System BMS		Specification	Remark
	Key component	System BMS	mounted into switchgear assembly
	Communication	CAN 2.0B 500kbps	For Rack communication
	Communication	MODBUS RTU (RJ45) MODBUS TCP/IP (RJ45)	For PCS or EMS communication

Table 9 System BMS Specification

1.4.2 Mechanical Drawing

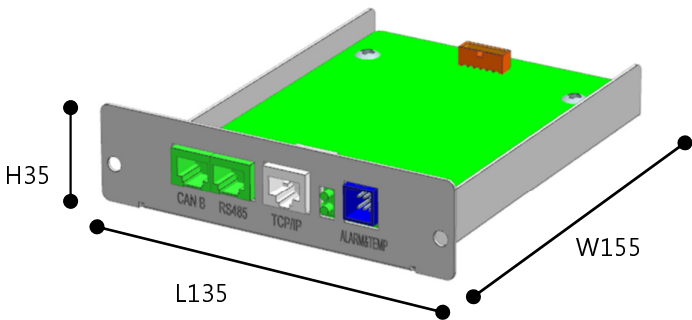


Figure 3 System BMS

2. Handling Issues

2.1 Unloading and Unpacking

Carefully remove the plastic cover from the pallet. The packages are situated on a pallet on which it can be transported via forklift from location to location.

A damaged box or rattles during transport may indicate rough handling. Make a descriptive notation on the delivery receipt before signing. If damage is found, request an inspection by the carrier and file a damage claim. Pay particular attention to a damaged crate or staining from electrolyte or other fluids. Delay in notifying carrier may result in the loss of reimbursement for damages.

2.2 Storage

Follow the guidelines below when storing boxed Battery Trays.

The Battery Tray box should be upright as in Figure below. Do not place upside down when storing the Battery Tray box.



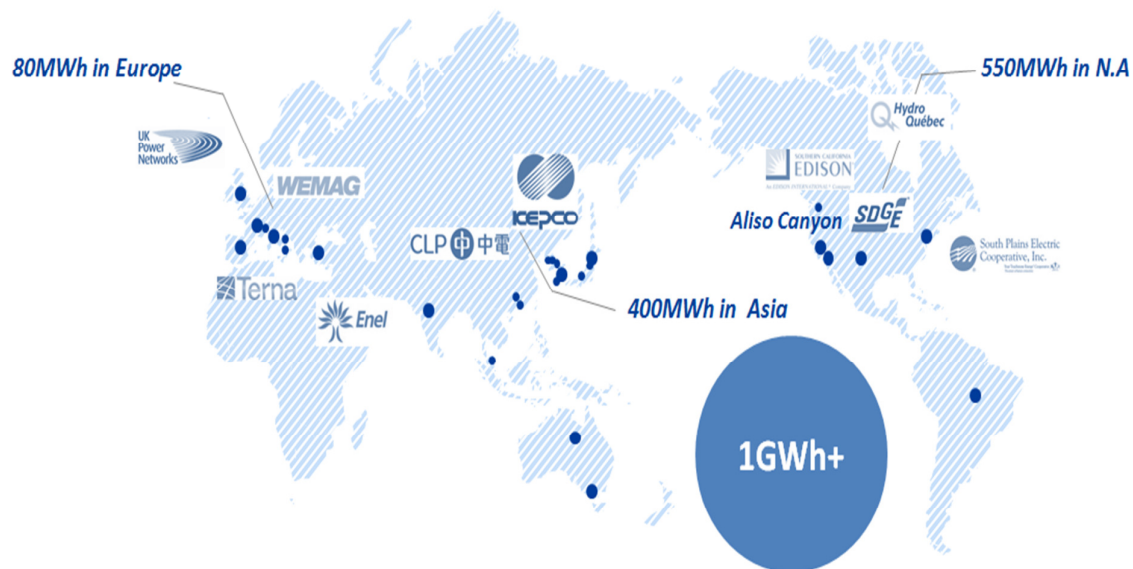
Figure 9 Storing state-of-charge (SOC) must be at 20% for maximum lifetime (Approx. OCV is 3.6V)

Appendix A

Description of Selected Projects

Samsung SDI leads the Japanese residential ESS market through its supply of residential ESS to Nichicon of Japan in 2012. Samsung SDI also made inroad into the lithium-ion UPS market through the signing of a UPS battery supply contract for Korea's Shin-Han Bank data center. In 2013, Samsung SDI also pioneered the commercial and power ESS applications in Korea and abroad. Specifically, Samsung SDI successfully installed an 8 MWh ESS, the largest in Korea, at the Jo-Cheon Substation in Je-Ju. In addition, Samsung SDI went on to win supply contracts from Germany, Italy, the U.K. and other European countries as well as India which is projected to become the world's largest ESS market.

1GWh+ of Energy Storage Deployment Worldwide



KEPCO:

Substation project in Je-Ju Island

4 MW / 8 MWh (Grid stabilization at substatio,2012)



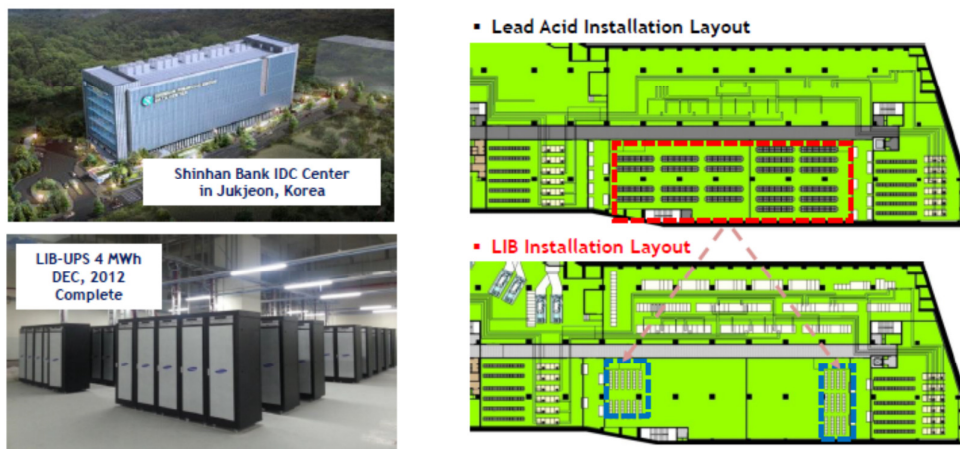
CCET (Center of Commercialization of Electric Technology):

1 MW / 1 MWh (Lubbock, TX, 2013)



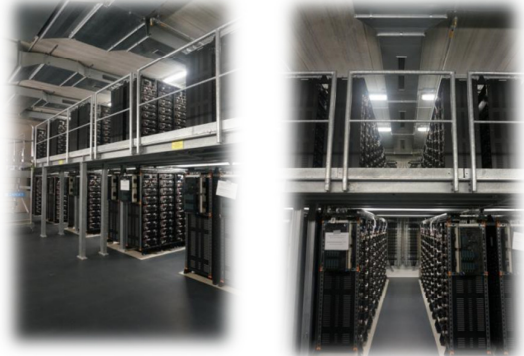
Shihan Bank Data Center:

Word's first large-scale LIB-UPS project (500 kVA, 30 Min; 4 MWh, 2012)



WEMAG

Frequency regulation – Chosen to supply 5 MWh ESS to WEMAG of Germany. This ESS installation went live in September 2014 at a substation operated by WEMAG in Schwerin, northern Germany. ESS was installed by Samsung SDI and PCS and EMS were supplied by Younicos.



U.K. Power Network

Secured 10 MWh ESS contract from S&C and U.K. Power Network

Samsung SDI, partnering with Younicos of Germany, supplied a 10 MWh ESS for power stability. Samsung SDI and Younicos delivered ESS and EMS respectively to this largest-ever LIB-powered ESS demonstration project undertaken in the U.K. The ESS is operated by UKPN, a power transmission and distribution company in the U.K. The installation completed in July 2014. The ESS significantly helps address the power frequency instabilities caused by aging local power networks.



Residential Energy Storage in Japan

Samsung SDI has secured contract for more than 15,000 units of 7.2 kWh (over 100 MWh) for residential energy storage since 2012, reaching 70% market share of the Japan residential market.



Residential rooftop solar and energy storage (7.2 kWh from Samsung)

Appendix B

Track Record in the Worldwide

No	Region	Application	Unit (kWh)	# of Unit	Capacity (kWh)	Delivery
1	Korea	Utility	8,700	1	8,700	2015
2	Korea	Utility	14,000	1	14,000	2015
3	Korea	Utility	8,000	1	8,000	2015
4	China	Utility	1,000	1	1,000	2015
5	Italy	Utility	2,000	1	2,000	2015
6	Japan	BTS	0.827	1,600	1,323	2013
7	India	BTS	1.77	50	88	2014
8	Korea	C&I	30	6	180	2010
9	Korea	C&I	20	3	60	2011
10	Italy	C&I	32	1	32	2012
11	Italy	C&I	32	2	32	2013
12	USA	C&I	32	19	608	2014
13	USA	C&I	42	5	210	2014
14	Japan	C&I	84	1	84	2014
15	Korea	Residential	7	52	364	2010
16	Italy	Residential	6	1	6	2012
17	Germany	Residential	6	17	99	2012
18	Korea	Residential	10	100	1,000	2012
19	Japan	Residential	7	17,613	126,813	2012
20	Italy	Residential	6	3	18	2013
21	Japan	Residential	12	29	348	2013
22	Korea	Residential	10	30	300	2013
23	Germany	Residential	6	90	522	2013
24	Japan	Residential	17	25	425	2014
25	Korea	UPS	17	1	17	2011
26	Korea	UPS	100	1	100	2012
27	Malaysia	UPS	167	2	333	2012
28	Korea	UPS	33	2	66	2012
29	Korea	UPS	30	1	30	2012
30	Korea	UPS	167	32	5,333	2012

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No	Region	Application	Unit (kWh)	# of Unit	Capacity (kWh)	Delivery
35	Korea	UPS	167	4	666	2013
36	Korea	UPS	67	2	133	2013
37	Korea	UPS	167	5	833	2013
38	Korea	UPS	604	6	3,623	2013
39	Korea	UPS	543	2	1,086	2013
40	Korea	UPS	453	1	452	2014
41	Korea	UPS	181	5	905	2014
42	Vietnam	UPS	28	1	28	2014
43	Korea	UPS	114	1	114	2014
44	Korea	UPS	142	1	142	2014
45	Korea	UPS	192	4	767	2014
46	Korea	UPS	462	12	5,541	2014
47	Korea	Utility	200	1	200	2011
48	Korea	Utility	150	1	150	2011
49	Korea	Utility	50	20	1,000	2011
50	Spain	Utility	50	1	50	2011
51	Korea	Utility	50	20	1,000	2012
52	Japan	Utility	32	1	32	2012
53	Germany	Utility	56	4	224	2012
54	USA	Utility	75	1	75	2012
55	Italy	Utility	56	2	112	2012
56	Korea	Utility	1,000	1	1,000	2012
57	USA	Utility	39	3	117	2012
58	Italy	Utility	56	5	280	2013
59	Korea	Utility	8,000	1	8,000	2013
60	Germany	Utility	56	100	5,600	2013
61	Italy	Utility	42	25	1,050	2013
62	USA	Utility	56	20	1,120	2013
63	Korea	Utility	42	9	383	2013
64	Korea	Utility	42	8	336	2013
65	Korea	Utility	42	40	1,700	2013
66	USA	Utility	56	120	6,720	2013
67	Korea	Utility	42	274	11,508	2014
68	Australia	Utility	56	24	1,344	2014
69	UK	Utility	42	264	11,088	2014
70	Italy	Utility	56	40	2,240	2014
71	China	Utility	56	26	1,456	2014
72	Korea	Utility	56	72	4,032	2014

No	Region	Application	Unit (kWh)	# of Unit	Capacity (kWh)	Delivery
73	Korea	UPS	167	2	333	2012
74	Korea	UPS	167	1	166	2013
75	Korea	UPS	167	1	166	2013
76	Malaysia	UPS	167	1	166	2013

- End of Document -

APPENDIX C:

Battery MSDS



1. Product and Company Identification USA, EU

Important Note: As a solid, manufactured article, exposure to hazardous ingredients is not expected with normal use. This battery is an article pursuant to 29 CFR 1910.1200 and, as such, is not subject to the OSHA Hazard Communication Standard requirement. The information contained in this Material Safety Data Sheet contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Commercial product name

MODEL CM0940R0003A (94Ah capacity)

Use of the substance/preparation

Lithium-Ion battery

Company/undertaking identification

Manufacturer

SAMSUNG SDI Co. LTD
428-5 Gongse-dong, Giheung-gu, Yongin-si,
Gyeonggi-do, 446-577 Korea

Telephone: ++82 31 210 8535

Telefax: ++82 31 210 8289

Contact person: Euiryong Bang

Telephone:

Responsible Department: Development Team

Responsible for the safety data sheet: er.bang@samsung.com

Further Information

Battery-System: Lithium-Ion (Li-ion)

Voltage: 3.68V

Anode (negative electrode): based on intercalation graphite

Cathode (positive electrode): based on lithiated metal oxide (Cobalt, Nickel, Manganese)



Remark:

The information and recommendations set forth are made in good faith and believed to be accurate as of the date of preparation. SAMSUNG SDI Co., Ltd. makes no warranty, expressed or implied, with respect to this information and disclaims all liabilities from reliance on it.

2. Hazards Identification USA

Route(s) of Entry

There is no hazard when the measures for handling and storage are followed.

Signs and Symptoms of Exposure

In case of cell damage, possible release of dangerous substances and a flammable gas mixture.

OSHA Hazard Communication: This material is not considered hazardous by the OSHA Hazard Communication Standard 29CFR 1910.1200.

Carcinogenicity (NTP): Not listed

Carcinogenicity (IARC): Not listed

Carcinogenicity (OSHA): Not listed

Special hazards for human health and environment

There is no hazard when the measures for handling and storage are followed.

In case of cell damage, possible release of dangerous substances and a flammable gas mixture.

2. Hazards Identification USA, EU

Explication of special hazards for human health and environment

Not classified as dangerous according to directive 1999/45/EEC

There is no hazard when the measures for handling and storage are followed.

In case of cell damage, possible release of dangerous substances and a flammable gas mixture.

3. Composition/information on ingredients USA, EU

Hazardous components

EC-No.	CAS-No.	Chemical name	Quantity	EU-Classification
215-154-6	1307-96-6	Cobalt oxide	< 30 %	Xn, N R22435053
215-202-6	1313-13-9	Manganese dioxide	< 30 %	Xn R20/22
215-215-7	1313-99-1	Nickel oxide	< 30 %	Carc. Cat. 1, T R49-43-48/23--53
231-153-3	7440-44-0	Carbon	10 - 30 %	
		Electrolyte (*)	10 - 20 %	Carc. Cat. 3, C, R10-34-40-43
	24937-79-9	Polyvinylidene fluoride (PVdF)	< 10 %	
231-072-3	7429-90-5	Aluminium foil	2 - 10 %	



231-159-6	7440-50-8	Copper foil	2 - 10 %	
		Aluminium and inert materials	5 - 10 %	

Full text of each relevant R phrase can be found in heading 16.

Further Information

For information purposes:

(*) Main ingredients: Lithium hexafluorophosphate, organic carbonates

Because of the cell structure the dangerous ingredients will not be available if used properly.
During charge process a lithium graphite intercalation phase is formed.

Mercury content: Hg < 0.1mg/kg

Cadmium content: Cd < 1mg/kg

Lead content: Pb: < 10mg/kg

4. First Aid Measures USA, EU

General information

The following first aid measures are required only in case of exposure to interior battery components after damage of the external battery casing.

Undamaged, closed cells do not represent a danger to the health.

After inhalation

Ensure of fresh air. Consult a physician.

After contact with skin

In case of contact with skin wash off immediately with plenty of water. Consult a physician.

After contact with eyes

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Seek medical treatment by eye specialist.

After ingestion

Drink plenty of water.

Call a physician immediately.

5. Fire Fighting Measures USA, EU

Suitable extinguishing media

Cold water and dry powder in large amount are applicable.

Use metal fire extinction powder or dry sand if only few cells are involved.

Special hazards arising from the chemical

May form hydrofluoric acid if electrolyte comes into contact with water.

In case of fire, the formation of the following flue gases cannot be excluded:

Hydrogen fluoride (HF), Carbon monoxide and carbon dioxide.



Protective equipment and precautions for firefighters

Wear self-contained breathing apparatus and protective suit.

Additional information

If possible, remove cell(s) from fire fighting area. If heated above 125°C, cell(s) can explode/vent. Cell is not flammable but internal organic material will burn if the cell is incinerated.

6. Accidental Release Measures USA, EU

Personal precautions

Use personal protective clothing.

Avoid contact with skin, eyes and clothing.

Avoid breathing fume and gas.

Environmental precautions

Do not discharge into the drains/surface waters/groundwater.

Methods for cleaning up/taking up

Take up mechanically and send for disposal.

7. Handling and Storage USA, EU

Handling

Advice on safe handling

Avoid short circuiting the cell. Avoid mechanical damage of the cell. Do not open or disassemble.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition.

Storage

Requirements for storage rooms and vessels

Storage at room temperature (approx. 20°C) at approx. 20-50% of the nominal capacity (OCV approx. 3.5-3.7 V).

Keep in closed original container.

8. Exposure Controls/Personal Protection Exposure limit values Exposure limits USA

8. Exposure controls/personal protection Exposure limit values Exposure limits (EH40) EU

CAS-No.	Chemical name	ml/m ³	mg/m ³	F/ml	Category	Origin
7440-44-0	Graphite, respirable	-	4 -		TWA (8 h) STEL (15 min)	WEL WEL



Additional advice on limit values

During normal charging and discharging there is no release of product.

Occupational exposure controls

No specific precautions necessary.

Protective and hygiene measures

When using do not eat, drink or smoke. Wash hands before breaks and after work.

Respiratory protection

No specific precautions necessary.

Hand protection

No specific precautions necessary.

Eye protection

No specific precautions necessary.

Skin protection

No specific precautions necessary.

9. Physical and Chemical Properties USA, EU

Appearance

Form:	Solid
Color:	Various
Odor:	Odorless

Important health, safety and environmental information

Test method

pHValue:	n.a.
Flash point:	n.a.
Lower explosion limits:	n.a.
Vapour pressure:	n.a.
Density:	n.a.
Water solubility:	Insoluble
Ignition temperature:	n.a.

10. Stability and Reactivity USA, EU

Stability

Stable



Conditions to avoid

Keep away from open flames, hot surfaces and sources of ignition. Do not puncture, crush or incinerate.

Materials to avoid

No materials to be especially mentioned.

Hazardous decomposition products

In case of open cells, there is the possibility of hydrofluoric acid and carbon monoxide release.

Possibility of Hazardous Reactions

Will not occur

Additional information

No decomposition if stored and applied as directed.

11. Toxicological Information USA, EU

Empirical data on effects on humans

If appropriately handled and if in accordance with the general hygienic rules, no damages to health have become known.

12. Ecological Information USA, EU

Further information

Ecological injuries are not known or expected under normal use. Do not flush into surface water or sanitary sewer system.

13. Disposal Considerations USA, EU

Advice on disposal

For recycling consult manufacturer.

Contaminated packaging

Disposal in accordance with local regulations.

14. Transport Information USA, EU

US DOT 49 CFR 172.101

Proper shipping name

Lithium-ion batteries

ID Number: UN3480

Hazard Class or Division: 9

Packing group: II

Label: 9



Land transport (ADR/RID)

UN number:	3480
ADR/RID class:	9
Classification code:	M4
Warning plate	
Hazard label:	9



ADR/RID packing group:	II
Limited quantity:	LQ 0
Tunnel restriction code:	E
Description of the goods	Lithium-ion batteries

Other applicable information (land)

LQ 0: No exemption under the conditions of 3.4.2.
Transport category: 2

Marine transport

UN number:	3480
IMDG code:	9
Marine pollutant:	No
Hazard label:	9



IMDG packing group:	II
EmS:	F-A, S-I
Limited quantity:	None
Description of the goods	Lithium-ion batteries

Air transport

UN/ID number:	3480
ICAO/IATA-DGR:	9
Hazard label:	9



ICAO packing group:	II
Limited quantity Passenger:	-
IATA-packing instructions - Passenger:	965



IATA-max. quantity - Passenger:	5 kg G
IATA-packing instructions - Cargo:	965
IATA-max. quantity - Cargo:	35 kg G
Description of the goods	Lithium-ion batteries

Other applicable information

Lithium equivalent:	29.6g
Wh-rating per cell:	346 Wh

15. Regulatory Information USA

U.S. Regulations

National Inventory TSCA

SAMSUNG SDI certifies that all chemical components of the Model CS0600R0005B (60 Ah capacity) Lithium-Ion Battery are listed on the US EPA TSCA 8(b) Inventory or are exempt from listing.

SARA

To the best of our knowledge this product contains no toxic chemicals subject to the supplier notification requirements of Section 313 of the Superfund Amendments and Reauthorization Act (SARA/EPCRA) and the requirements of 40 CFR Part 372.

15. Regulatory information EU

Labeling

Hazardous components which must be listed on the label

As an article the product does not need to be labeled in accordance with EC directives or respective national laws.

EU regulatory information

1999/13/EC (VOC): 0 %

16. Other Information USA

Hazardous Materials Information Label (HMIS)

Health: 0
Flammability: 0
Physical Hazard: 0

NFPA Hazard Ratings

Health: 0
Flammability: 0
Reactivity: 0
Unique Hazard:

16. Other Information EU

Full text of R-phrases referred to under sections 2 and 3

R10 Flammable.



R20/22	Harmful by inhalation and if swallowed.
R22	Harmful if swallowed.
R34	Causes burns.
R40	Limited evidence of a carcinogenic effect.
R43	May cause sensitization by skin contact.
R48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R49	May cause cancer by inhalation.
R50	Very toxic to aquatic organisms.
R53	May cause long-term adverse effects in the aquatic environment.

Further Information USA, EU

Data of sections 4 to 8, as well as 10 to 12, do not necessarily refer to the use and the regular handling of the product (in this sense consult package leaflet and expert information), but to release of major amounts in case of accidents and irregularities. The information describes exclusively the safety requirements for the product

(s) and is based on the present level of our knowledge. This data does not constitute a guarantee for the characteristics of the product(s) as defined by the legal warranty regulations. "(n.a. = not applicable; n.d. = not determined)"

The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.