

Petition For A Declaratory Ruling That No Certificate Of Environmental Compatibility And Public Need Is Required For The Installation Of A Customer-Side two(2)- 400 kW Fuel Cell Project To Be Located At Amgraph Packaging Inc., 90 Inland Road, Sprague, CT 06330.

I. INTRODUCTION

Pursuant to Connecticut General Statutes Section 16-50k, Doosan Fuel Cell America Inc. hereby petitions the Connecticut Siting Council (the “Council”) for a declaratory ruling (“Petition”) that a Certificate of Environmental Compatibility and Public Need (“Certificate”) is not required for the installation of two (2) 400 kW fuel cell in support of a customer-side distributed resources project in Sprague, Connecticut (the “Project”) as described below. Doosan Fuel Cell America Inc. submits that no Certificate is required because the proposed installation would not have a substantial adverse environmental effect.

II. DESCRIPTION AND LOCATION OF THE PROJECT

The fuel cell is a customer-side installation distributed generation resource with grid interconnection and is to be located at the Amgraph Packaging facility in Sprague, CT (see project site – Attachment A). The installation consists of two (2) natural-gas fueled 400 kW PureCell[®] Model 400 phosphoric acid fuel cell system (“Fuel Cell”) manufactured by Doosan Fuel Cell America, Inc. in South Windsor, Connecticut (see Attachment B for Model 400 datasheet). The overall dimensions of each of the Fuel Cell power plants are approximately nine feet wide by twenty-nine feet long by ten feet tall. The units are totally enclosed and factory-assembled and tested prior to shipment.

The Fuel Cell is intended for a distributed generation and combined heat and power application. The system for Amgraph Packaging Inc. will be capable of producing a total of 800 kW of continuous, reliable electric power while generating heat that will be used for space heating. It will operate in parallel with the utility grid and provide a portion of the electrical requirements of the facility. When all of the heat is used, the overall efficiency of the system will be up to 90%, including both electric and thermal output. The fuel cell system will be used to preheat the new boiler system Amgraph Packaging Inc. is planning for the facility. As long as natural gas is available, electric power and heat can be generated.

The PureCell[®] Model 400 fuel cell system has been certified to meet the strict ANSI/CSA FC-1 fuel cell safety standard to protect against risks from electrical, mechanical, chemical, and combustion safety hazards. Numerous safety features have been incorporated into the design. A combustible gas sensor and thermal fuses located throughout the power module cabinet detect any over-temperature. The detection of a potential combustible gas mixture, over-temperature, or the failure of this detection circuit will result in a power plant shutdown and a subsequent inert gas (nitrogen) purge of the fuel cell stack and fuel processing system. This event will also result in a system alarm notification to the power plant operator (Doosan Fuel Cell America, Inc.).

The power plant is designed with an integral emergency-stop button on the outside of the enclosure to enable immediate shutdown in the event of an emergency. There is also a gas shut-off valve and electrical disconnect switch easily accessible to emergency personnel.

The fuel cell stack is wrapped in a fire retardant blanket. There are no materials inside the unit that would sustain a flame. There is no large volume of gas or any ignition that occurs within the cell stack. The power plant does not store hydrogen; it consumes hydrogen-rich gas equal to what it requires to produce power.

Phosphoric acid is an integral part of the fuel cell system, acting as the electrolyte within the fuel cell stack. Phosphoric acid is a surprisingly common substance that is contained in common cola drinks. There is no reservoir of liquid; phosphoric acid is contained in the porous structure of the fuel cell stack material by capillary action, similar to how ink is absorbed into a blotter.

The only fluid in the power plant is water. All pressurized water vessels are designed to ASME boiler codes and inspected annually. All piping, welds, etc. meet pressurized piping standards. Water produced through the electrochemical process is “pure” water and is reclaimed and reused by the process. The other source of water is water used in the external cooling module, which is mixed with a propylene glycol and a rust inhibitor to prevent rust and freezing in colder climates.

The fuel cell does not produce any hazardous waste during normal operation. Standard Material Safety Data Sheets (MSDS) are available in the product service manual.

III. PROJECT BENEFITS

Fuel cell technology represents an important step in advancing Connecticut’s goal of diversifying its energy supply through the use of renewable energy, as expressed in Connecticut General Statutes Section 16-244 et seq. The Project will serve as a cost-effective clean energy source while also reducing the demand for grid electricity from this location. Further, this fuel cell installation will support the efforts of the State of Connecticut to be a leader in the utilization of fuel cell technology.

Because a fuel cell does not burn fuel, the system will significantly reduce air emissions associated with acid rain and smog, and dramatically reduce those emissions associated with global warming. The application of the Fuel Cell for Amgraph Packaging Inc. is estimated to

reduce the facility's annual carbon emissions by over 240 metric tons when compared to the build margin emissions in the Northeast grid utility system (per the Green-e Climate Protocol for Renewable Energy). The Fuel Cell is designed to operate in total water balance – no make-up water is normally required after start-up and no water discharges to the environment will occur under normal operating circumstances. Furthermore, unlike many traditional power generation systems, fuel cells produce very little sound and typically do not require sound proofing or cause the need for hearing protection.

IV. NO SUBSTANTIAL ADVERSE ENVIRONMENTAL EFFECT

The proposed installation will have no substantial adverse environmental effect. The installation and operation of the Fuel Cell will meet all air and water quality standards of the Connecticut Department of Environmental Protection (“DEP”).

Section 22a-174-42 of the Regulations of Connecticut State Agencies (RCSA) governing air emissions from new distributed generators exempts fuel cells from air permitting requirements. Notwithstanding this exemption, the Fuel Cell system meets the CT emissions standards for a new distributed generator as shown in Table 1 below, and no permits, registrations or applications are required under rules based on the actual emissions of the fuel cell. Furthermore, the Fuel Cell system has been certified by the California Air Resources Board to meet the Distributed Generation Certification Regulation 2007 Fossil Fuel Emissions Standards (see Attachment C). Please note that Doosan Fuel Cell America, Inc. is in the process of reapplying for this certification as the manufacturer.

Table 1: CT Emissions Standards for a New Distributed Generator

Air Pollutant	CT Emissions Standard (lbs/MWh)	Each PureCell Model 400 Fuel Cell System at Rated Power (lbs/MWh)
Oxides of Nitrogen	0.3	.02
Carbon Monoxide	2	.02
Carbon Dioxide	1900	1050

With respect to water discharges, the Model 400 Fuel Cell is designed to operate without water discharge under normal operating conditions. To the extent that minimal water overflow may occasionally occur, such discharges will consist of de-ionized water and will be directed to a site sanitary drain or dry well. This discharge will be incorporated into the overall site design, and will be covered by the site's water discharge permit, if necessary.

Further, the Fuel Cell installation and operation will have no substantial adverse effect on listed endangered species or listed Connecticut historical places. Attachment D contains the relevant portion of the CT DEP's Sprague Endangered Species map. The installation of the two (2) PureCell Model 400 fuel cells will be located on the south side of the main Amgraph Packaging facility along the paved the delivery road and is outside of identified locations of endangered species populations. The Amgraph Packaging facility site had been a gravel pit before the entire site become home to modern industrial plants, so it is not believed to be considered "historical."

The Fuel Cell will not emit noise in excess of limitations set forth in CT regulations. The Fuel Cell location will be on the side of the Amgraph Packaging facility facing 28 acres of open field, which is also owned by Amgraph Packaging Inc. The closest neighbor/residence is across Inland Road-over 600 feet distance from the fuel cells. CT's most strict applicable regulation requires a noise level of no greater than 45dBA from a Class B emitter (Amgraph Packaging) to a Class A receptor (residential houses). The fuel cell is expected to operate at full power (800

kW), with a noise level in free field of below 45dBA at 200 feet. Therefore, the fuel cell is not expected to emit “excessive noise” to any neighboring buildings.

V. LOCAL INPUT AND STATE-UTILITY INCENTIVES

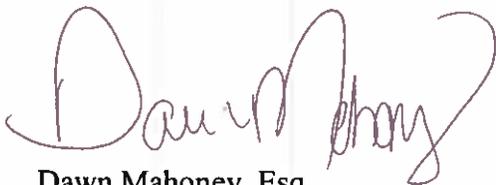
Doosan Fuel Cell America Inc. met with local officials and then presented to the Sprague Planning and Zoning Commission on July 1, 2015 the plans for the installation of the two fuel cells. On July 7th, the Sprague Planning and Zoning Commission approved the zoning permit for the fuel cell installation “for the Amgraph property located at 90 Inland Road” --see Attachment E. Eversource Energy awarded Amgraph Packaging Inc. a 15 year Low Emissions Renewable Energy Credit (LRECs) contract for the electricity the new fuel cell systems generates-[CLP Docket N. 11-12-06, Compliance-Order 5, December 4, 2013, Bid Number 916].

VI. CONCLUSION

As set forth above, Doosan Fuel Cell America Inc. requests that the Council issue a determination, in the form of a declaratory ruling, that the proposed installation above is not one that would have a substantial adverse effect, and, therefore, that a Certificate is not needed.

Respectfully submitted,

By:

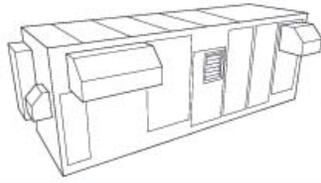


Dawn Mahoney, Esq.
General Counsel
Doosan Fuel Cell America Inc.

Attachment A: Project Site. The fuel cell systems will be located in an area along the southern Amgraph Packaging facility's maintenance road.



Attachment B: PureCell® Model 400 Datasheet



Model 400
FUEL CELL SYSTEM

PURECELL® SYSTEM BENEFITS

Energy security

proven, continuous generation that is setting durability records

Energy productivity

increased efficiency that is reducing energy costs

Energy responsibility

clean operation that is driving greener customer facilities

PURECELL SYSTEM COMPETITIVE ADVANTAGE

Long life

industry best, 10-year cell stack life assures high availability and low service cost

High efficiency

up to 90% overall efficiency

Modular and scalable

systems can be clustered to meet growing energy demands

Experience

most knowledgeable and experienced team in the industry

Grid-independence

proven performance in providing power when the utility grid fails

Load-following

can modulate power output to match building needs

Small footprint

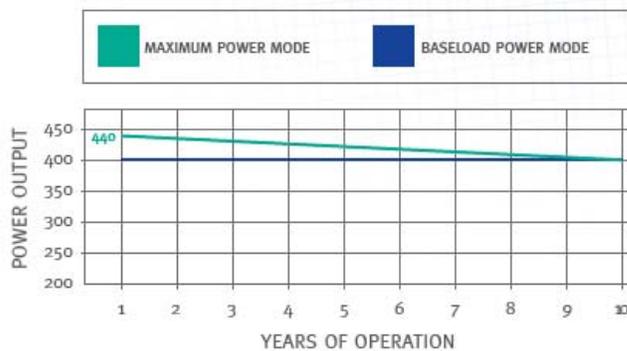
high power density takes less space on site

Flexible siting

indoor, outdoor, rooftop, multi-unit

RATED POWER OUTPUT: 440kW, 480VAC/60HZ

Characteristic	Units	Operating Mode	
		Maximum Power ¹	Baseload Power ¹
Electric Power Output	kW/kVA	440/440	400/471
Electrical Efficiency	%, LHV	41%	42%
Peak Overall Efficiency	%, LHV	90%	90%
Gas Consumption	MMBtu/h, HHV (kW)	4.06 (1,190)	3.60 (1,056)
Gas Consumption ²	SCFH (Nm ³ /h)	3,961 (106.1)	3,515 (94.2)
High Grade Heat Output @ up to 250°F	MMBtu/h (kW)	0.76 (223)	0.64 (188)
Low Grade Heat Output @ up to 140°F	MMBtu/h (kW)	0.99 (290)	0.88 (258)



FUEL

Supply.....Natural Gas
Inlet Pressure 10 to 14 in. water (25 - 35 mbar)

EMISSIONS ^{3, 4}

NOx0.01 lbs/MWh (0.006 kg/MWh)
CO 0.02 lbs/MWh (0.009 kg/MWh)
VOC 0.02 lbs/MWh (0.009 kg/MWh)
SO₂ Negligible
Particulate Matter..... Negligible
CO₂ (electric only)1,049 lbs/MWh (476 kg/MWh)
(with full heat recovery)495 lbs/MWh ⁵ (225 kg/MWh)

OTHER

Ambient Operating Temp. -20°F to 104°F (-29°C to 40°C)
Sound Level <65 dBA @ 33 ft. (10m)
Water Consumption.....None (up to 85°F (30°C Ambient Temp.)
Water DischargeNone (Normal Operating Conditions)

CODES AND STANDARDS

ANSI/CSA FC1-2012: Stationary Fuel Cell Power Systems
UL1741: Inverters for Use With Distributed Energy Resources

NOTES

1. Average performance during 1st year of operation. Refer to the Product Data and Applications Guide for performance over the operating life of the powerplant.
2. Based on natural gas higher heating value of 1025 Btu/SCF (40.4 MJ/Nm³)
3. Emissions based on 400 kW operation.
4. Fuel cells are exempt from air permitting in many U.S. states.
5. Includes CO₂ emissions savings due to reduced on-site boiler gas consumption.

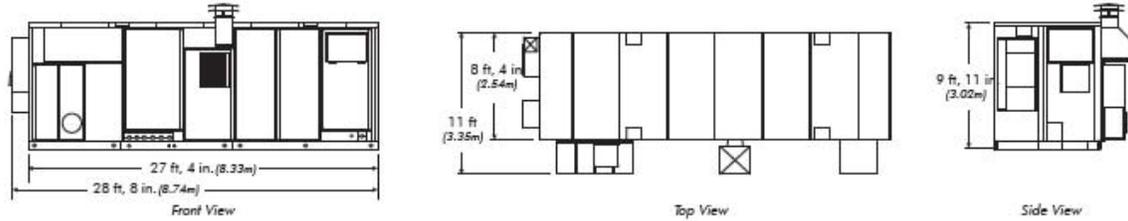




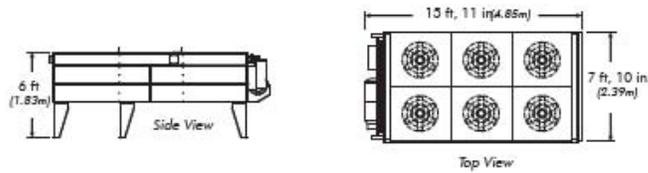
PureCell Model 400 FUEL CELL SYSTEM

SYSTEM DIMENSIONS

Power Module



Cooling Module



Shipping Dimensions

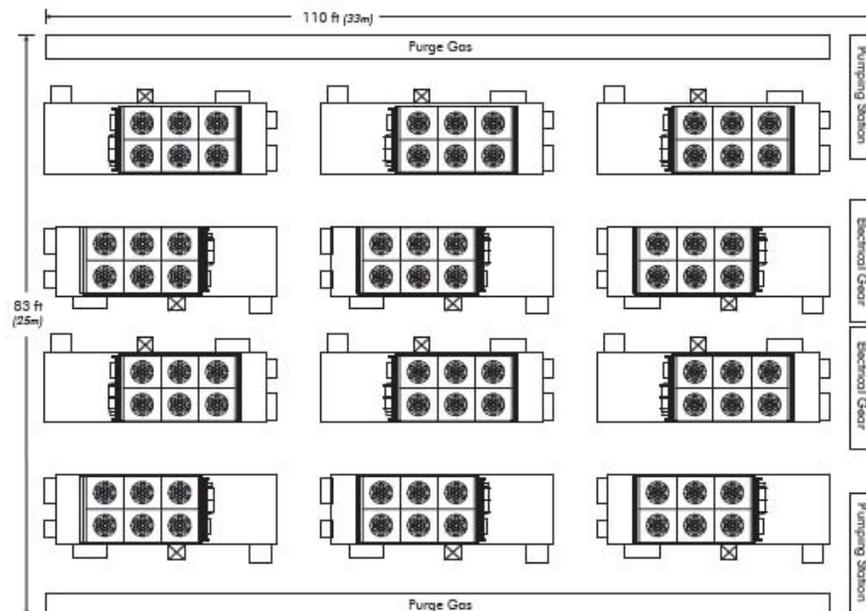
	Power Module	Cooling Module
Length	28 ft, 8 in. (8.74m)	15 ft, 11 in. (4.85m)
Width	8 ft, 4 in. (2.54m)	7 ft, 10 in. (2.39m)
Height	9 ft, 11 in. (3.02m)	6 ft (1.83m)
Weight	60,000 lb (27,216 kg)	3,190 lb (1,447 kg)

MULTI-MEGAWATT CAPABILITY

For multi-megawatt sites, individual power plants can be arranged in multiple orientations. The 12-unit layout defined below represents one option with cooling modules located on the roof of the power plants minimizing the overall footprint of the site.

No. of Units	Baseload Electric Output MW	High-Grade Heat MMBtu/h (kW)	Low-Grade Heat MMBtu/h (kW)	Fuel Consumption MMBtu/h, HHV (kW)	Site Area ft ² (m ²)
6	2.4	3.8 (1,128)	5.3 (1,548)	21.6 (6,334)	4,400 (410)
12	4.8	7.7 (2,256)	10.6 (3,096)	43.2 (12,668)	8,900 (830)
24	9.6	15.4 (4,512)	21.1 (6,192)	86.5 (25,337)	17,800 (1,650)
36	14.4	23.1 (6,768)	31.7 (9,288)	129.7 (38,005)	26,700 (2,480)
48	19.2	30.8 (9,024)	42.3 (12,384)	172.9 (50,673)	35,600 (3,310)
60	24.0	38.5 (11,280)	52.8 (15,480)	216.2 (63,341)	44,500 (4,140)

12-Unit System Layout



NOTES

- Space required for electrical gear and pumping stations is representative only.
- Purge gas is required to purge the system of unspent fuel during shutdowns and prior to start-up.

The manufacturer reserves the right to change or modify, without notice, the design or equipment specifications without incurring any obligation either with respect to equipment previously sold or in the process of construction. The manufacturer does not warrant the data on this document. Warranted Specifications are documented separately.

Doosan Fuel Cell America, Inc.
Corporate Headquarters
195 Governor's Highway
South Windsor, CT 06074

www.doosanfuelcellamerica.com

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A0290

Attachment C: California Air Resources Board Emissions Certification

State of California AIR RESOURCES BOARD

Executive Order DG-040

Distributed Generation Certification of UTC Power Corporation 440kW PureCell® System Model 400

WHEREAS, the Air Resources Board (ARB) was given the authority under California Health and Safety Code section 41514.9 to establish a statewide Distributed Generation (DG) Certification Program to certify electrical generation technologies that are exempt from the permit requirements of air pollution control or air quality management districts;

WHEREAS, this DG Certification does not constitute an air pollution permit or eliminate the responsibility of the end user to comply with all federal, state, and local laws, rules and regulations;

WHEREAS, on September 24, 2012, UTC Power Corporation applied for a DG Certification of its 440 kW PureCell® System Model 400 fuel cell and whose application was deemed complete on December 10, 2012;

WHEREAS, UTC Power Corporation has demonstrated, according to test methods specified in California Code of Regulations (CCR), title 17, section 94207, that its natural-gas-fueled 440kW PureCell® System Model 400 fuel cell has complied with the following emission standards:

1. Emissions of oxides of nitrogen no greater than 0.07 pounds per megawatt-hour.
2. Emissions of carbon monoxide no greater than 0.10 pounds per megawatt-hour.
3. Emissions of volatile organic compounds no greater than 0.02 pounds per megawatt-hour.

WHEREAS, UTC Power Corporation has demonstrated that its 440kW PureCell® System Model 400 fuel cell complies with the emissions durability requirements in CCR, title 17, section 94207(d); and

WHEREAS, I find that the applicant, UTC Power Corporation, has met the requirements specified in CCR, title 17, article 3, Distributed Generation Certification Program, and has satisfactorily demonstrated that the 440kW PureCell® System Model 400 fuel cell meets the DG Certification Regulation 2007 Fossil Fuel Emission Standards.

NOW THEREFORE, IT IS HEREBY ORDERED, that a DG Certification, Executive Order DG-040 is granted.

This DG Certification:

- 1) Is subject to all conditions and requirements of CCR, title 17, article 3, Distributed Generation Certification Program, including the provisions relating to inspection, denial, suspension, and revocation.
- 2) Shall be void if any manufacturer's modification results in an increase in emissions or changes the efficiency or operating conditions of a model, such that the model no longer meets the 2007 DG Certification emission standards.
- 3) Shall expire on the 26th day of December, 2017.

Executed at Sacramento, California, this 26th day of December 2012.

James N. Goldstene
Executive Officer
by

/s

Cynthia Marvin, Chief
Stationary Source Division

Attachment D: Connecticut DEEP Sprague, CT Endangered Species Map (shaded areas denote known locations of State and federally listed species).

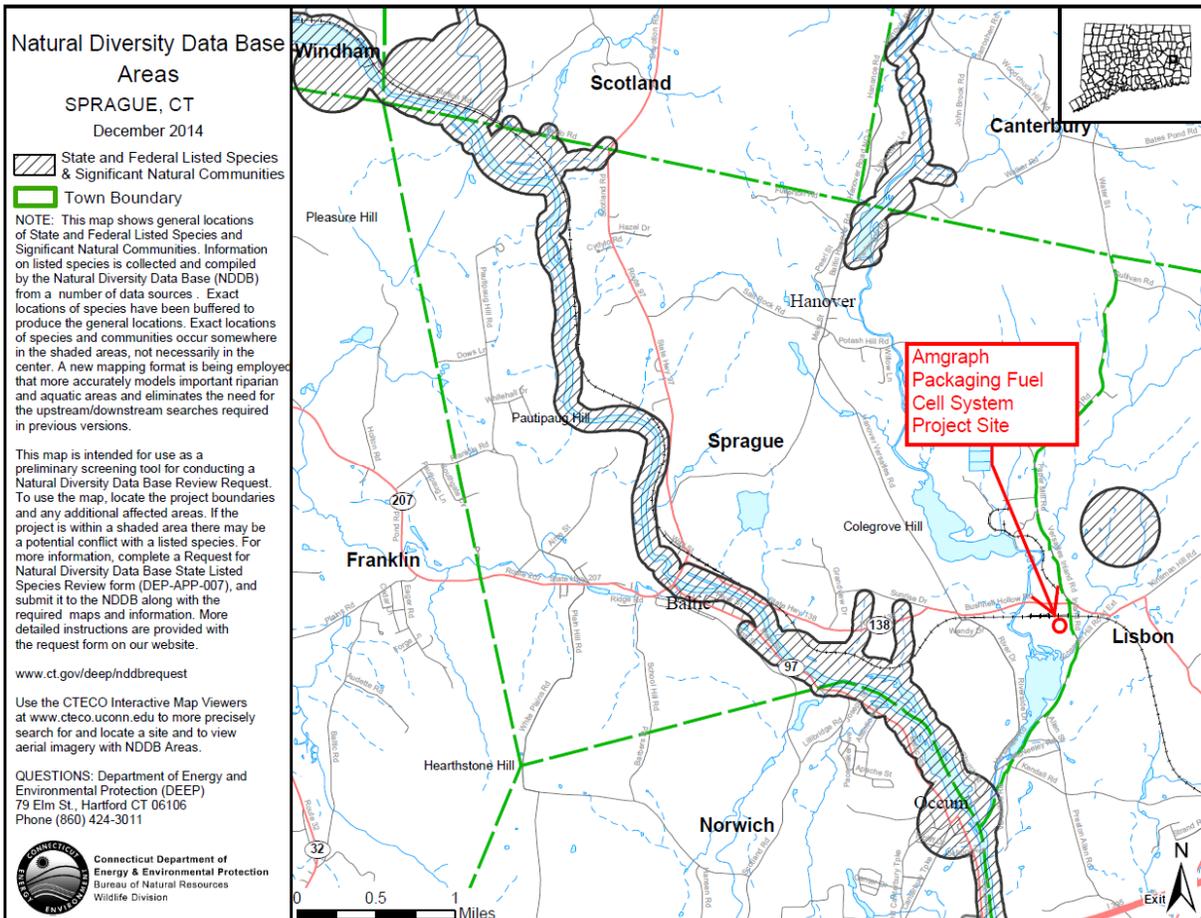


Exhibit E: Town of Sprague Planning and Zoning Commission approval



TOWN OF SPRAGUE

Planning and Zoning Commission

1 Main Street
Baltic, Connecticut 06330
860-822-3000 Ext. 223
Fax: 860-822-3016
landuse@ctsprague.org

July 7, 2015

Josh Abrams
Doosan Fuel Cell America
195 Governor's Highway
South Windsor, CT 06074

Dear Mr. Abrams:

At the regular meeting of the Sprague Planning and Zoning Commission held on July 1, 2015, your request for a zoning permit for two fuel cell units and ancillary equipment for the Amgraph property located at 90 Inland Road was reviewed. Please be advised that the Commission voted to approve your application.

If you have any questions, please contact us.

Sincerely yours,

Sander Bittman cjh

Sander Bittman, Chairman

SB/cjh

Cc: Ken Fontaine, Amgraph Packaging
Joseph Smith, ZEO



Doosan Fuel Cell America, Inc.
195 Governor's Highway
South Windsor, CT 06074
T - 860 727 2200

August 4, 2015

To the Persons on the Attached List

RE:Petition of Doosan Fuel Cell America, Inc. to the Connecticut Siting Council for a Declaratory Ruling for the Location and Construction of two 400 kW Fuel Cells at Amgraph Packaging Inc., 90 Inland Road, Sprague, CT

Pursuant to Section 16-50j-40 of the Connecticut Siting Council's (the "Council") regulations, we are notifying you that Doosan Fuel Cell America, Inc. intends to file on or shortly after July 30, 2015 a petition for declaratory ruling with the Council. The petition will request the Council's approval of the installation of two (2) 400 kW Fuel Cells project in support of a customer-side distribution resources project at 190 Inland Road, Lisbon, CT on a concrete pad to be installed. Each of the Fuel Cell units is 28'-8" x 8'-4" x 9'-11"; in addition there will be ancillary equipment including cooling fans. Electricity generated by the Facility will be consumed primarily at the Site, and any excess electricity will be exported to the electric grid. The Facility will be fueled by natural gas.

Doosan Fuel Cell America, Inc. was selected by Amgraph Packaging, Inc. as a winning bidder in the "Low and Zero Emissions Renewable Energy Credit Program" established under Sections 107, 108, and 110 of Public Act No. 11-80. As a result of that selection, Doosan Fuel Cell America, Inc. has entered into a Standard Contract for the Purchase and Sale of Connecticut Class I Renewable Energy Credits with CL&P, which was approved by the Connecticut Public Utilities Regulatory Authority on December 4, 2013.

If you have any questions regarding the proposed Facility, please contact any of the following:

John Connelly, Engineer
Amgraph Packaging Inc.
90 Inland Road
Sprague, CT
(Mail address. PO Box 178, Versailles, CT 06383)
Office: 860-822-2052
john.connelly@amgraph.com

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051 Telephone: (860) 827-2935

Sincerely,
Doosan Fuel Cell America, Inc.

A handwritten signature in dark ink, appearing to read "Dawn Mahoney". The signature is written in a cursive, flowing style.

Dawn Mahoney, Esq.
General Counsel
Doosan Fuel Cell America, Inc.

**PROOF OF
NOTICE**

This is to certify that on the 20th day of December 2013, the foregoing notice was sent via first class mail to the following:

AGENCY	NAME/ADDRESS
Chief Executive Officer	Catherine A. Osten-First Selectman Sprague Town Hall P.O. Box 677 1 Main Street, Baltic, CT 06330
Zoning Enforcement Officer	Joseph D. Smith Sprague Town Hall P.O. Box 677 1 Main Street, Baltic, CT 06330
Town Planner	Thomas Seidel Sprague Town Hall P.O. Box 677 1 Main Street, Baltic, CT 06330
Land Use	Colette J. Hoffman Sprague Town Hall P.O. Box 677 1 Main Street, Baltic, CT 06330
State Senator	Kathy Osten Legislative Office Building Room 2100 Hartford, CT 06106-1591
State Representative	Doug Dubitsky PO Box 70 North Windham, CT 06256
United Congressman	Joe Courtney 55 Main Street Suite 250 Norwich, CT 06360
United State Senator	Christopher S. Murphy One Constitution Plaza, 7th Floor Hartford, CT 06103
United State Senator	Richard Blumenthal 30 Lewis St., Suite 101 Hartford, CT 06103

State Department of Energy and Environmental Protection	Robert Klee, Commissioner 79 Elm Street Hartford, CT 06106
State Department of Public Health	Dr. Jewel Mullen Commissioner 410 Capitol Avenue Hartford, CT 06134
State Council on Environmental Quality	Susan Merrow, Chair 79 Elm Street Hartford, CT 06106
State Department of Agriculture	Steven K. Reviczky Commissioner 165 Capitol Avenue Hartford, CT 06106
Office of Policy and Management	Benjamin Barnes, Secretary 450 Capitol Avenue Hartford, CT 06106-1379
State Department of Economic and Community Development	Catherine Smith, Commissioner 505 Hudson Street Hartford, CT 06106-7106
Board of Selectman of Lisbon, CT	Thomas W. Sparkman, Chairman 1 Newent Road Lisbon, CT 06351

ABUTTER PROPERTY	Map Blk,Lot	NAME/ADDRESS	* Map Code
Albert O. Rondeau	19-07-01	Albert O. Rondeau	5 & 6
191 Riverside Drive, Sprague CT	19-07-10	191 Riverside Dr., Baltic, CT 06330	
State of CT/Providence & Worcester		State of CT/Providence & Worcester Railroac	8
Scotland Road, Sprague, CT		79 Elm St., Hartford, CT 06106	
Fusion Paperboard CT LLC	19-06-01	Fusion Paperboard CT LLC	3 & 7
113 Bushnell Hollow, Sprague, CT	19-07-09	P.O. Box 238, Versailles, CT 06383-0178	
Peter and Jessica Rainville	04/034-0000	Peter and Jessica Rainville	1
150 Paper Mill Road, Lisbon, CT		343 S Burnham Highway, Lisbon, CT	
Douglas P & Kimberly Syren	04/033-0000	Douglas P & Kimberly Syren	2
144 Paper Mill Road, Lisbon, CT		144 Paper Mill Road, Libon, CT	
Amgraph Packaging	19-07-07	Amgraph Packaging	4
190 Inland Road, Sprague, CT		P.O. Box 178, Versailles, CT 06383	

*See attached map A

Map A
Abutters to the proposed Fuel Cell installation at: Amgraph
Packaging, Inc., 90 Inland Road, Sprague, CT
*[Map code Red #s corresponds to Abutters list on page 3]

