



The Commonwealth of Massachusetts

DEPARTMENT OF PUBLIC UTILITIES

D.T.E./D.P.U. 06-60

August 22, 2008

Petition of Russell Biomass LLC, pursuant to G.L. c. 40A, § 3, for exemption from the zoning by-laws of the Town of Russell to construct and operate a wood-burning electric generating facility.

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I. SUMMARY

In this Order, the Department denies the petition by Russell Biomass LLC for an exemption from the zoning by-laws of the Town of Russell.

In coming to our decision in this case, the Department is not denying the siting, construction, or operation of the proposed Russell Biomass facility. Instead, our decision is limited to denying the Company's request that the Department exempt the facility from review by the Town of Russell. In this Order, we find that the proposed facility has potential value to the public as a renewable resource that could provide downward pressure on the price of electricity in the region and the cost of meeting our renewable portfolio standards, could contribute to improving the reliability of electricity supply, and could do so in a way that may help Massachusetts meet its carbon control mandate. As a general matter, the Department considers it very important to carefully consider the long-term benefits associated with the development of renewable resources in Massachusetts in its evaluation of petitions for exemption from local zoning ordinances; in a recent decision, the Department considered just such factors and determined that, in consideration of the public benefits of renewable resource development, an exemption from local zoning ordinances was warranted. See Princeton Municipal Light Department, D.T.E./D.P.U. 06-11 (2007) (granting zoning exemptions for two proposed 1.6 megawatt ("MW") wind turbines).

We distinguish this case from our decision in D.T.E./D.P.U. 06-11 based on the seriousness of the local impacts against which we must balance the broader set of public benefits. Specifically, we find that, on balance, the public interest benefits associated with

operation of the Russell Biomass facility are outweighed by significant impacts on the local interests of the town of Russell, in particular those impacts associated with a substantial and disruptive increase in large truck traffic along the main street of the town. Exemption from the town's zoning by-laws could prevent the Town of Russell from working with the developer of the Russell Biomass facility to ensure that the town's concerns with respect to local impacts are adequately addressed prior to construction or operation of the facility. The Department cannot conclude that the public benefits of the proposed facility warrant overriding the town's ability to determine whether and how to address the significant local impacts of the proposed facility. Consequently, we find pursuant to G.L. c. 40A, § 3 that, on balance, the Russell Biomass project as proposed is not reasonably necessary for the convenience or welfare of the public, and thus we deny the Company's petition.

II. INTRODUCTION

Pursuant to G.L. c. 40A, § 3, Russell Biomass LLC ("Russell Biomass" or "Company") has filed a petition with the Massachusetts Department of Public Utilities ("Department") for certain exemptions from the Town of Russell zoning bylaws ("by-laws") in connection with the Company's proposed construction of a 50-megawatt ("MW") biomass (wood-fired) electric generating facility in Russell ("proposed facility" or "project").

G.L. c. 40A, § 3 permits companies that are determined by the Department to be public service corporations to seek an exemption by the Department from local zoning ordinances if the Department determines that the proposed use of the land is reasonably necessary for the public convenience or welfare. In making this determination, as described herein, the

Department must balance the public benefits of the project with its impacts on the local interest.

A. Description of the Proposed Project and Site

1. The Proposed Project

The proposed biomass facility would burn approximately 510,000 tons per year (“tpy”) of wood to produce steam to drive the facility’s turbine and produce electricity (Exh. RB-1, at 3). Approximately 2,000 tons per day of wood would be supplied to the facility by tractor-trailer trucks five days a week, with an average of 150-160, and a maximum of 240, truck trips per day (Exh. PB-1, at 5; RR-DPU-2). The wood to be used would be “wood fuel” as defined by the Massachusetts Department of Environmental Protection (“MassDEP”). The facility’s annual net energy production would be approximately 400 million kilowatt hours (“kWh”); the electricity would be transmitted to the grid by a proposed new five-mile-long transmission line (Exh. DTE-6-1, at 3-1).¹

The facility would include either a stoker-fired or a bubbling fluidized bed (“BFB”) boiler, a 133-foot-high boiler house with a fuel-oil start up system, a 60-foot-high turbine building, a 300-foot-high exhaust stack, and an electrical switching station (Exhs. DTE-6-1, at 3-1; DPU-8; RB-7). The facility would include a 1.5-million-gallon water-storage tank; average cooling-water withdrawals from the Westfield River would total approximately 662,000 gallons per day, with a maximum withdrawal of 885,000 gallons per day (Exhs.

¹ The Energy Facilities Siting Board is reviewing the Company’s transmission line proposal in a separate proceeding, Russell Biomass LLC/Western Massachusetts Electric Company, EFSB 07-4/DTE 07-35/07-36.

RB-1, at 4; DTE-6-1, at 10-3). The facility also would include a 15,000-gallon above-ground aqueous ammonia storage tank, and a 65,000-gallon above-ground fuel oil storage tank for the facility's low-sulfur fuel-oil boiler start-up system (Exhs. CHI-7; DTE-6-1, at 12-6; RB-1, at 4). The facility would include a 5.1-acre outdoor wood-stockpiling area capable of storing an approximately 30-day supply of wood (Exh. DTE-6-1, at 3-1).

2. The Proposed Site

Russell is a small, rural town with a population of approximately 1,650 as of 2000 (Exhs. DPU-RU-1(2) at 55; DPU-82, at 6). The site for the proposed facility is located at the base of Shatterack Mountain, along the eastern side of the Westfield River; a CSX rail line runs between the river and the site, and the areas to the east, north, and south are undeveloped forested lands (Exhs. RB-3, at 1-2; RB-1, at 51; DPU-RU-1(2) at 1). The Company stated that the site has been used for industrial purposes since the mid-1800s (Exhs. DTE-6-1, at 15-1; RB-1, at 51). The Westfield Paper Company produced glassine paper at the site from 1915 to 1994 (Exhs. RB-3, at 1-2; DPU-3, at 14-1). Gravel mining operations were conducted at the site from 2000 to 2005 (Exh. DTE-6-1, at 4-6; Tr. 4, at 540). Since 1999, a portion of the site has been used as a transfer location for logs that have been harvested and are in transition for delivery to saw mills (Exhs. DTE-6-1, at 4-5; KEN-23(S); Tr. 4, at 529-531). There are no homes located on the east side of the Westfield River in the area of the site; the closest residential areas are the Grove Street and River Street neighborhoods across the river, which are situated approximately 1000 feet to 2000 feet, respectively, northwest of the proposed plant stack (Exhs. RB-1, at 51; DTE-6-1, at 4-6).

Sole access to the proposed site is from Route 20, via Main Street in Russell, crossing the Westfield River bridge for a distance of approximately one-half mile to the site driveway (Exhs. RB-7; RR-DPU-6-1(S)(2)). The Main Street area is known as “the village”; it includes five residential streets, four of which are cul-de-sacs that can be accessed only from Main Street (Tr. 8, at 1108). The record indicates that Main Street itself is 78 percent residential (Exh. DPU-73). Maps indicate that Main Street appears to have the following: approximately 30 residences on both sides of the street; five cross-streets; three cross-walks; three handicapped parking areas; pedestrian sidewalks on both sides (on some portions); and on-street parking on one or both sides (Exh. RPB-39; RR-DPU-6-1(S)). Although all of the residences on Main Street have off-street parking, residents also park along Main Street in front of their homes (Exh. DPU-73). Approximately 17 percent of Main Street frontage consists of public services or facilities: the Town Hall, post office,² library, fire department, two churches, a Masonic lodge, and the wastewater treatment plant (Exh. DPU-73; RR-DPU-6).³

² Residents of the village area must pick up their mail at the post office as there is no home delivery in this area of Russell (Tr. 8, at 1109).

³ The Russell Center Historic District is located along Main Street and consists of 38 buildings and one site (Exh. DPU-3, at 14-4; RR-DPU-33). The Company stated that the National Register’s Historic District designation is “non-restrictive” and “honorary,” and that Russell does not have a local historic by-law; therefore, there are no specific requirements pertaining to the Russell Center Historic District (Exh. DPU-3, at 14-4; RR-DPU-33). With regard to the proposed site and the remaining papermill buildings, the Company indicated that the Massachusetts Historical Commission has determined that the facility is not eligible for listing in the National Registry of Historic Places, and the Russell Historic Commission opined that the proposed use is in keeping
(continued...)

B. Procedural History

1. Local Zoning Review

The proposed facility site is located in an industrial use district, and the proposed facility is classified as a general manufacturing use under the by-laws (Exh. RB-1, at 14). As a result, the facility requires a Special Permit from the Russell Zoning Board of Appeals (“ZBA”) and site plan approval from the Russell Planning Board (“Planning Board”) (*id.*; Exh. RB-6, Table 1, at 2). On March 1, 2005, the Company applied to the ZBA for a Special Permit and submitted a site plan to the Planning Board (“zoning application”) (Exh. RB-1, at 14). The ZBA and Planning Board conducted joint public hearings on the Company’s zoning application in April, May, and June 2005. On June 28, 2005, the ZBA voted 3-0 to grant the project a Special Permit. The Special Permit included 29 conditions. On the same date, the Planning Board voted 3-1 to grant approval, subject to essentially the same 29 conditions (*id.*; Exhs. RB-1(1); RB-1(2)).⁴ On August 1, 2005, four individual Russell residents filed an appeal of the Special Permit in the Massachusetts Land Court (Exh. RB-1, at 16; Exh. RB-1(3)). In September 2006, the parties to the Land Court appeal agreed to stay the appeal pending the Department’s issuance of a decision in this proceeding, and the Land Court approved the stay (Exh. DPU-7).

³ (...continued)
with past historic uses (Exh. DTE-6-1, at 15-2, App. L).

⁴ The two permits will be referred to herein as the “Special Permit.”

2. DPU Zoning Exemption Proceeding

The Company filed this zoning exemption petition with the Department on June 29, 2006. The Petition was duly noticed, and on September 13, 2006, the Department conducted a site visit and public comment hearing in Russell. The Department received 37 petitions for leave to intervene in the proceeding, and four petitions for limited participant status. The Department granted intervenor status to the following: the Town of Russell and the ZBA (jointly); the Planning Board; and 25 individual Russell residents. The Department granted limited participant status was granted to the City of Westfield, the Town of Montgomery, Western Massachusetts Electric Company (“WMECO”), and one individual.

The Department and the intervenors issued approximately 350 written information requests to Russell Biomass. The Company issued approximately 50 information requests to the intervenors. The Department conducted 13 days of evidentiary hearings, nine of which were conducted in Boston, and four of which were conducted in the City of Westfield. Russell Biomass presented the testimony of 11 witnesses, including testimony of project principals and engineering and environmental consultants. The intervenors presented the testimony of 15 witnesses, including Town of Russell officials, professional truck drivers, and environmental and engineering consultants.

The Company filed an Initial Brief and a Reply Brief. Intervenors and limited participants filing Initial Briefs were: Ruth Kennedy and Brian Janik, jointly; James and Robin

Unger;⁵ the Russell Planning Board; the City of Westfield; and the Town of Montgomery.

Ruth Kennedy and Brian Janik, jointly, filed a Reply Brief.

3. Requested DPU Zoning Relief

In its petition, the Company seeks exemption from four individual sections of the by-laws, as well as a comprehensive exemption from the by-laws as a whole (Exhs. RB-1, at 17-28; CHI-29; Tr. 1, at 15-19). Additionally, in place of the 29 conditions in the Special Permit, Russell Biomass has proposed 29 “Directives,” which the Company suggests that the Department include in its approval of the Company’s petition.

a. Requested Exemptions

The Company seeks exemption from Section 3 of the by-laws, “Schedule of Use Regulations,” and the related Section 6.4, “Special Permits.” The Company states that, as a general manufacturing use in an industrially-zoned district under Section 3, the proposed facility requires a Special Permit from the ZBA pursuant to Section 6.4 (Exhs. RB-1, at 13; RB-6, at Table 1).⁶ The Company acknowledged that the Planning Board and ZBA have issued a Special Permit for the proposed facility (Exh. RB-1, at 16). The Company asserted that it nonetheless seeks exemption from the Special Permit requirements in Section 3 and Section 6.4 because (1) the Special Permit has been appealed to the Land Court and its

⁵ The Unger Brief was filed on behalf of 21 of the 25 citizen-intervenors (“joint intervenors”).

⁶ Section 3.06.3 of the by-laws requires the Company to obtain both a Special Permit and site plan approval for the proposed facility (Exh. RB-6, Table 1). Thus, exempting the Company from Section 3 also would exempt it from site plan review.

effectiveness has been stayed as a matter of law pending the resolution of the appeal; (2) if the Land Court does not uphold the Special Permit, the likely remedy would be a remand to the ZBA and another special permit proceeding; (3) even if the Special Permit were upheld by the Land Court, the plaintiffs could appeal the decision to the Massachusetts Appeals Court, seek a further stay of the Special Permit, and thus further delay the project; and (4) even if the Special Permit were upheld, the Company has determined that it cannot comply with certain of the 29 conditions in the Special Permit without adversely affecting the project's financeability (Exh. RB-1, at 16-23).

The Company also seeks exemption from certain dimensional and density requirements in the by-laws because of differences between the most recent site plan for the facility and the site plan submitted to the ZBA and Planning Board in the 2005 Special Permit proceeding (Exhs. RB-1, App. 5; RB-7). The Company stated that three facility components -- the pump house, water clarifier, and water storage tank-- now would not meet the applicable 30-foot setback requirement (Exh. DPU-11(S)). Additionally, the Company asserted that up to six buildings or structures on-site, including the boiler house (133 feet high) and the stack (300 feet high) may require variances from the 35-foot height limitation (Exhs. DPU-8; DPU-61). Finally, the Company seeks exemption from Section 5.2 of the by-laws, "Earth Removal," which requires a special permit for the excavation, removal, or processing of earth (Exh. CHI-29; Tr. 1, at 16).

In addition to the four individual exemptions, the Company also seeks a comprehensive exemption from the by-laws. The Company asserts that the Department should issue a

comprehensive exemption because: (1) the Land Court appeal of the Special Permit prevents the project from moving forward; (2) even if the Land Court appeal is resolved quickly and favorably, other outstanding zoning issues relative to height limitations and recent changes to the project's site plan likely will result in unacceptable project delays; (3) a delay in project development would make it more difficult for Massachusetts to satisfy its renewables requirements;⁷ and (4) issuance of a comprehensive exemption now will avoid piecemeal zoning exemption requests for the project in the future (Exh. RB-1, at 12).

b. Proposed Company Directives

The Special Permit issued by the ZBA and Planning Board for the proposed project contained 18 findings and 29 conditions (Exh. BR-1, Att. 3). In place of the Special Permit's findings and conditions, Russell Biomass has proposed, and has offered to comply with, a set of 29 "Directives." The Company asserts that its 29 Directives parallel, and are consistent with the spirit of, the 29 conditions, and has suggested that the Department include the Directives as part of the Order granting the Company's zoning exemption petition (Exh. RB-1, at 23-24).

Many of the proposed Directives are similar to their counterparts in the Special Permit. However, as discussed in more detail in Section V, below, three of the directives would represent material changes to the project as presented to, and approved by, the ZBA and Planning Board. Specifically, Directive 1 would allow the plant to burn wood from sources specifically prohibited by the Special Permit; Directive 2 would increase the allowable number

⁷ See Section V.A, below.

of fuel-truck deliveries from a daily maximum of 60 to a daily maximum of 120, and a daily average of 75-80; and Directive 8 would eliminate certain time-of-day limits set by the Town on facility construction activities, and the need for the Company to seek Town approval to construct outside those limits (Exh. UNG-3(1)). See also Attachment A, appended hereto.⁸

III. STANDARD OF REVIEW

G.L. c. 40A, § 3 provides, in relevant part, that

Land or structures used, or to be used by a public service corporation may be exempted in particular respects from the operation of a zoning ordinance or by-law if, upon petition of the corporation, the [Department] shall, after notice given pursuant to section eleven and public hearing in the town or city, determine the exemptions required and find that the present or proposed use of the land or structure is reasonably necessary for the convenience or welfare of the public . . .

Thus, a petitioner seeking exemption from a local zoning by-law under G.L. c. 40A, § 3 must meet three criteria. First, the petitioner must qualify as a public service corporation. Save the Bay, Inc. v. Department of Public Utilities, 366 Mass. 667 (1975). Second, the petitioner must establish that it requires exemption from the zoning ordinance or bylaw. Boston Gas Company, D.T.E. 00-24, at 3 (2001). Finally, the petitioner must demonstrate that its present or proposed use of the land or structure is reasonably necessary for the public convenience or welfare. Massachusetts Electric Company, D.T.E. 01-77, at 4 (2002); Tennessee Gas Pipeline Company, D.T.E. 01-57, at 3-4 (2002).

⁸ Attachment A compares nine of the Special Permit conditions and one of its specific findings to the Company's ten corresponding proposed Directives in this proceeding.

A. Public Service Corporation

In determining whether a petitioner qualifies as a “public service corporation” for the purposes of G.L. c. 40A, § 3, the Massachusetts Supreme Judicial Court has stated:

among the pertinent considerations are whether the corporation is organized pursuant to an appropriate franchise from the State to provide for a necessity or convenience to the general public which could not be furnished through the ordinary channels of private business; whether the corporation is subject to the requisite degree of governmental control and regulation; and the nature of the public benefit to be derived from the service provided.

Save the Bay, 366 Mass. at 680. See also D.T.E. 00-24, at 3-4; Berkshire Power Development, Inc., D.P.U. 96-104, at 26-36 (1997). The Department interprets this list not as a test, but rather as guidance to ensure that the intent of G.L. c. 40A, § 3 will be realized, *i.e.*, that a present or proposed use of land or structure that is determined by the Department to be “reasonably necessary for the convenience or welfare of the public” not be foreclosed due to local opposition. See D.P.U. 96-104, at 30; Save the Bay, 366 Mass. at 685-686; Town of Truro v. Department of Public Utilities, 365 Mass. 407, at 410 (1974). The Department has interpreted the “pertinent considerations” as a “flexible set of criteria which allow the Department to respond to changes in the environment in which the industries it regulates operate and still provide for the public welfare.” D.P.U. 96-104, at 30; see also Dispatch Communications of New England d/b/a Nextel Communications, Inc., D.P.U./D.T.E. 95-59-B/95-80/95-112/96-113, at 6 (1998). The Department has determined that it is not necessary for a petitioner to demonstrate the existence of “an appropriate franchise” in order to establish public service corporation status. D.P.U. 96-104, at 31.

B. Exemption Required

In determining whether exemption from a particular provision of a zoning bylaw is “required” for purposes of G.L. c. 40A, § 3, the Department looks to whether the exemption is necessary to allow construction or operation of the petitioner’s project as proposed. See D.T.E. 01-77, at 4-5; D.T.E. 01-57, at 5; Western Massachusetts Electric Company, D.P.U./D.T.E. 99-35, at 4, 6-8 (1999); Tennessee Gas Company, D.P.U. 92-261, at 20-21 (1993). It is the petitioner’s burden to identify the individual zoning provisions applicable to the project and then to establish on the record that exemption from each of those provisions is required:

The Company is both in a better position to identify its needs, and has the responsibility to fully plead its own case... The Department fully expects that, henceforth, all public service corporations seeking exemptions under c. 40A, § 3 will identify fully and in a timely manner all exemptions that are necessary for the corporation to proceed with its proposed activities, so that the Department is provided ample opportunity to investigate the need for the required exemptions.

New York Cellular Geographic Service Area, Inc., D.P.U. 94-44, at 18 (1995).

C. Public Convenience or Welfare

In determining whether the present or proposed use is reasonably necessary for the public convenience or welfare, the Department must balance the interests of the general public against the local interest. Save the Bay, 366 Mass. at 680; Town of Truro, 365 Mass. at 410. Specifically, the Department is empowered and required to undertake "a broad and balanced consideration of all aspects of the general public interest and welfare and not merely [make an] examination of the local and individual interests which might be affected." New York Central Railroad v. Department of Public Utilities, 347 Mass. 586, 592 (1964). When reviewing a

petition for a zoning exemption under G.L. c. 40A, § 3, the Department is empowered and required to consider the public effects of the requested exemption in the State as a whole and upon the territory served by the applicant. Save the Bay, 366 Mass. at 685; New York Central Railroad, 347 Mass. at 592.

With respect to the particular site chosen by a petitioner, G.L. c. 40A, § 3 does not require the petitioner to demonstrate that its preferred site is the best possible alternative, nor does the statute require the Department to consider and reject every possible alternative site presented. Rather, the availability of alternative sites, the efforts necessary to secure them, and the relative advantages and disadvantages of those sites are matters of fact bearing solely upon the main issue of whether the preferred site is reasonably necessary for the convenience or welfare of the public. Martarano v. Department of Public Utilities, 401 Mass. 257, 265 (1987); New York Central Railroad, 347 Mass. at 591.

Therefore, when making a determination as to whether a petitioner's present or proposed use is reasonably necessary for the public convenience or welfare, the Department examines: (1) the present or proposed use and any alternatives or alternative sites identified; (2) the need for, or public benefits of, the present or proposed use; and (3) the environmental impacts or any other impacts of the present or proposed use. The Department then balances the interests of the general public against the local interest, and determines whether the present or proposed use of the land or structures is reasonably necessary for the convenience or welfare of the public. D.T.E. 00-24, at 2-6; D.T.E. 01-77, at 5-6; D.T.E. 01-57, at 5-6; Tennessee Gas Company, D.T.E. 98-33, at 4-5 (1998).

IV. PUBLIC SERVICE CORPORATION

The Company argued that, in accordance with Department precedent, “any corporation that owns generating assets in Massachusetts, and makes those assets available to serve the New England market, is a public service corporation” (Exh. RB-1, at 8, citing USGen New England, Inc., D.T.E. 03-83, at 15 n.9 (2004)). The record shows that Russell Biomass is a Massachusetts limited liability company whose business is “the investment in and development of power generating facilities . . . including buying, acquiring, owning, [and] operating such facilities” (Exh. RB-1, at 5; RB-1(6)). The Company states that Russell Biomass LLC would be the corporate owner of the proposed generating facility assets, and that the Company plans to make the output of the facility available to the New England energy market (Exh. RB-1, at 8).⁹ Given the above facts, the Department finds that Russell Biomass qualifies as a public service corporation in accordance with G.L. c. 40A, § 3.

V. PUBLIC CONVENIENCE OR WELFARE

A. Need for or Public Benefit of Use

1. Company Position

The Company asserted that the proposed project would help Massachusetts and the region: (1) meet the need for new renewable electric generating supplies; (2) meet greenhouse gas reduction goals; (3) meet the need for lower-cost electricity and reliable energy supplies; and (4) reduce dependence on natural gas and oil to produce electricity (Company Brief at

⁹ The Company stated that it has no plans to sell electricity at retail and, therefore, that it is a wholesale generation company as defined by G.L. c. 164, § 1 (Exh. RB-1, at 6).

26-27). The Company further asserted that the proposed project would dispose of wood by-products in an efficient and environmentally sensitive manner (id.).

Russell Biomass indicated that it received an Advisory Ruling in April 2005 from the Massachusetts Department of Energy Resources (“DOER”) stating that the proposed project, as then described, qualified as a New Renewable Generation Unit under the Massachusetts Renewable Portfolio Standard (“RPS”) program (Exh. RB-1, at 39; RB-1(7)).¹⁰ The Company asserted that as a qualified renewable energy source, the proposed facility would help the Commonwealth and retail electricity suppliers meet the RPS mandate that an increasing percentage of customers’ electricity needs be met by renewable resources. The Company characterized this as a unique public benefit (Exh. RB-1, at 2, 11). The Company stated that all of the New England states have either a mandatory or voluntary RPS program (Exh. RB-DP/MH(C) at 10). The Company asserted that renewable energy certificates (“RECs”) generated by the proposed facility would likely meet most or all of these states’ RPS requirements (Exh. RB-1, at 11).

The Company projected that as Massachusetts RPS requirements continue to increase, the demand for renewable energy in New England would be approximately 4700 gigawatt

¹⁰ The RPS program requires retail electricity suppliers in Massachusetts to provide customers with an annually increasing percentage of electricity produced by renewable energy generators (Exh. RB-DP/MH(C) at 10). See G.L. c. 25A, § 11F; 225 C.M.R. § 14.00. The statute originally required one percent of kWh sales in 2003, with an increase of 0.5 percent each year through 2009 (Exh. RB-DP/MH(C), at 10; Exh. RB-1, at 34). On July 2, 2008, Governor Deval Patrick signed a comprehensive energy reform bill, the Green Communities Act, Chapter 169 of the Acts of 2008 (“Act”). Among other things, the Act doubles the required annual rate of increase in the RPS from 0.5 percent to one percent.

hours (“GWh”) by 2009 and 5900 GWh by 2010 (Exh. DPU-24-S). The Company then calculated that the total supply in New England would be approximately 2800 to 3100 GWh by 2008 (Exh. DPU-24-S). The Company estimated that the gap in supply and demand would be 2800 GWh at a minimum by 2010, the equivalent of 360 MW to 380 MW of biomass (id.).¹¹ Notably, the Company’s analysis compares its estimate of RPS demand with New England-only RPS-eligible resources, ignoring a significant quantity of RPS-eligible resources that are in operation or development in New York and other neighboring regions.

Under the RPS program, electric suppliers may meet their annual RPS obligations either by purchasing RECs¹² or by paying an Alternative Compliance Payment (“ACP”) if they are unable to procure the requisite number of RECs (Exhs. RB-1, at 35; RB-DP/MH(C) at 11). The ACP was set at \$50/MWh in 2003, to be adjusted for annual inflation (Exh. RB-DP/MH(C) at 11). The Company asserted that when there are insufficient RECs to meet the RPS targets, the price for RECs will rise to equal the ACP, which is now above \$55/MWh (Tr. 6, at 675). The Company asserted that these higher costs will be passed on to consumers (id.).

¹¹ This analysis is based on load projections from ISO-New England’s 2007 Capacity, Energy, Load, and Transmission (“CELT”) report, and incorporates updates to reflect Maine’s RPS goal and Connecticut’s extension of its renewable targets for Class I resources to 20 percent by 2020 (Exh. DPU-24-S). The analysis was performed prior to enactment of the July 2, 2008 Green Communities Act, which doubled the rate at which Massachusetts suppliers must increase their percentage of renewable power resources. See n.10, above.

¹² If a renewable energy facility qualifies as an RPS-eligible resource, it is issued a REC for each MWh of generation output.

Under the Regional Greenhouse Gas Initiative (“RGGI”), emissions of CO₂ are capped across the RGGI region, and all fossil-fuel generators with a capacity greater than 25 MW must acquire CO₂ allowances for each ton of CO₂ emitted (Exh. RB-DP/MH(C) at 13; Tr. 8, at 959).¹³ The Company stated that the proposed project would not be subject to RGGI since it is not a fossil-fuel generation facility (Tr. 8, at 959). The Company stated that the proposed facility could help meet RGGI CO₂-reduction goals, however, because the development of biomass plants would displace some of the need to build additional carbon-emitting generation or would displace some output from existing fossil-fuel generation (Exh. RB-DP/MH(C) at 14; Tr. 8, at 958).

The Company asserted that the proposed project would provide 50 MW of reliable capacity, which would increase the amount of generating capacity and energy available to the Springfield area, Massachusetts, and New England, and thus enhance the adequacy and reliability of the electric supply (Exhs. RB-DP/MH-1 (Att. C) at 3; DPU-28). In support, the Company provided information on the anticipated growth in energy and peak load for Massachusetts and the region based on ISO-New England’s (ISO-NE”) Regional System Plan, dated October 2006 (“2006 RSP”) (Exh. DPU-26-1). Specifically for 2010 (the year the facility is projected to come on-line), ISO-NE identified a possible need for 3105 MW of new

¹³ RGGI is an agreement (“MOU”) among ten northeastern states to jointly limit CO₂ emissions from large electric generating facilities through a cap and trade program. Governor Patrick signed the RGGI MOU on January 17, 2007. In January 2008, the MassDEP issued regulations implementing RGGI in Massachusetts.

capacity assuming a zero availability of tie-line benefits,¹⁴ 2070 MW of new capacity assuming 1000 MW of available tie-line benefits, and 1035 MW assuming 2000 MW of available tie-line benefits (Exh. RB-DP/MH(C) at 5).¹⁵ The Company reported that in later years the need for new capacity would trend upward to 4313 MW in 2015, assuming the 2000 MW level of tie-line benefits; the trend would be higher assuming either of the lower levels of possible tie-line benefits (*id.*).¹⁶

The Company stated that the project would be located in central Massachusetts/northeast Massachusetts (“CMA/NEMA”) – in which ISO-NE projects that new generation would result in higher reliability benefits to the region than new generation sited in the more remote regions of New England (Exhs. RB-DP/MH(C) at 6-7; DPU-26-1, at 40-41). Within Massachusetts, however, the Company noted generation was rated as beneficial to the same degree in the western Massachusetts, central Massachusetts, and northeastern Massachusetts

¹⁴ The amount of electric capacity available to an electrically integrated region, such as New England, from a second region (e.g., New York) via interconnection transmission facilities between the two regions is known as a tie-line benefit. The amount of tie-line benefits available is limited by both the capacity of the transmission line and the electric capacity available for transmission from the second region.

¹⁵ The Company indicated that 2000 MW in tie-line benefits is the amount that ISO-NE has used for the past few years to set installed capacity requirements, and that in the 2007 RSP the number is approximately 150 to 200 MW less than 2000 (Tr. 6, at 628-629).

¹⁶ The Company also provided an estimate based on the ISO-NE 2007 CELT report that contemplated the potential retirement of older units, which the RSP analysis does not (Exh. DPU-27). The Company’s comparison of existing capacity less the assumed retirements and installed capacity requirement based on the 2007 CELT report reference case leads to a difference of approximately 3300 MW by 2010 and 7200 MW by 2015 (Exhs. DPU-27; RB-DP/MH(C) at 4-5).

regions (Tr. 6, at 635-639; Exhs. DPU-27, at 5-6; DPU-26-1, at 41). The Company's witness explained that load pocket considerations in the Boston area, within northeastern Massachusetts, account for the common benefit level across Massachusetts (Tr. 6, at 638-639). The Company noted that ISO-NE has established a Forward Capacity Market ("FCM") to meet both system and local capacity requirements starting in the summer of 2010 and beyond (Exh. RB-DP/MH(C) at 7). The FCM would pay suppliers for their availability to produce power (Tr. 6, at 612).

The Company explained that as the proposed facility would likely operate as a baseload unit,¹⁷ it has the potential to suppress market prices because the introduction of lower-cost baseload supply would displace energy from higher-cost peaking sources, thereby lowering the clearing price for the entire market (Exh. RB-DP/MH(C) at 9; Tr. 6, at 663-665).¹⁸ The Company also asserted that because wholesale electricity prices have a locational component, the introduction of the proposed project into the local supply of generation for the Russell/Westfield area should provide some locational marginal pricing benefits (Exh. RB-DP/MH(C) at 10). The Company estimated that the project has the potential to suppress

¹⁷ The Company explained that for any facility to be categorized as a baseload unit it must have a competitive variable cost (Tr. 6, at 664). Specifically, in the context of the New England market, to the extent that a facility's variable cost is cheaper than gas-fired generation using an efficient combined-cycle unit, the Company stated that the facility would run as a baseload unit (id. at 665-666).

¹⁸ The Company explained that biomass can compete with an efficient gas-fired combined-cycle unit because the cost of biomass fuel today is less than half of that of natural gas, and biomass receives incentives to operate, such as the production tax credit and RECs (Tr. 6, at 666-667).

regional energy costs by \$30 million per year (id.). The Company based this estimate on the 2006 RSP analysis which estimated the potential saving of \$600 million in electric costs resulting from the installation of a hypothetical additional 1,000 MW of baseload generation in 2005 (id. at 9).

The Company stated that it has reserved capacity from the proposed facility, up to one MW, for the Town of Russell at a fixed price (Exhs. RPB-3; RPB-33). The Company expects to offer a set of increasing fixed prices for 30 years, which it estimates would be an average of about ten cents/kWh (RR-DPU-3; RR-DPU-25). One of the Company principals estimated that based on his analysis, this rate could be potentially two cents/kWh lower than those in the marketplace, based on fossil-fuel power, or a savings of about \$200 per year for the average household (Exh. RPB-3; RR-DPU-3). He explained that, to estimate avoided cost, he used a projection of natural gas power prices out to the years 2030 and 2040 to approximate the average electric rates over 30 years (RR-DPU-3; Tr. 8, at 973).

The Company asserted that the proposed facility is needed for fuel diversity in Massachusetts and the region to address both an economic and reliability need (Exh. RB-DP/MH(C) at 8; Tr. 6, at 659). The Company pointed to the high percentage (60 percent) of generating capacity fueled by gas or oil, and asserted that this fuel mix poses long-term risks of interrupted fuel supply and increased energy costs (Exh. RB-DP/MH(C) at 8). The Company noted that, 90 percent of the time, gas is the fuel that determines the market price for energy (Tr. 6, at 661). The Company concluded that the proposed project would diversify the

fuel mix and help reduce the long-term risks of interrupted fuel supply and price volatility (Exh. RB-DP/MH(C) at 9).

The Company asserted that Russell Biomass would burn approximately 510,000 tpy of wood fuel, using wood waste that has already been generated from various economic development activities (Exh. DPU-102; Tr. 1, at 144-147). The Company indicated that it would not clear cut any forest trees or contribute to the depletion of Massachusetts wood resources (Tr. 1, at 147-148). The Company asserted that based on data from 2002, approximately 4.1 million tpy of woody biomass is available in Massachusetts and Connecticut within a 75- to 100- mile radius of the proposed project site (Exhs. DPU-92; DTE-6-1, at 12-9; Tr. 2, at 223). The Company stated that, to date, it has received letters of interest in supplying wood to the proposed facility totaling approximately 1.03 million tpy (RR-DPU-14). The Company noted that it would categorize the project as “sustainably harvested biomass” because the amount of wood used by the facility would be less than the amount of new tree growth, based on an area including Massachusetts and the surrounding states, indicating no net loss of forest resource (Tr. 1, at 146-148; Tr. 2, at 225).

The Company indicated that the EPA has defined biomass as carbon neutral based on the carbon lifecycle associated with biomass (Tr. 8, at 959-960, 996). The Company stated that biomass generally is treated as carbon neutral because CO₂ emitted by a biomass facility is reabsorbed by other plant matter, which in turn can be used as a biomass fuel, a short-term cycle compared to petroleum-based fuel (*id.* at 961-964; Company Brief at 29). Thus, the Company stated, classification of biomass as carbon neutral is not affected by the fact that the

CO₂ emitted from a biomass facility is on the same order of magnitude as that of a gas- or coal-fired generating unit (Tr. 8, at 965).¹⁹

2. Intervenor Position

The Planning Board noted that the proposed plant would contribute only 0.16 percent of the ISO-NE projected electric demand in 2012 (Exh. RPB-34). The Planning Board questioned how such a small contribution could be justified as reasonably necessary for the public convenience and welfare in light of the proposed facility's local impacts (*id.*).

3. Analysis and Findings

The proposed project would qualify as a new renewable generation unit under the Massachusetts RPS program and would be qualified to earn RECs for its generation output. By providing additional RECs through the operation of a qualified renewable energy resource, the proposed project could contribute to lowering the price of a REC in the New England region.²⁰

¹⁹ The proposed facility would emit 546,000 tpy of CO₂ (Tr. 5, at 562).

²⁰ The Department notes that under the RPS program, a retail supplier must meet the RPS through either the retirement of RECs or by paying the ACP. See 225 C.M.R. § 14.02. Consequently, an individual project can not "help to meet" the RPS standards, as those standards must be met as a matter of law and regulation by all retail suppliers through either REC retirement or ACP payments. However, incremental REC-eligible resources can serve to reduce the need for ACP payments or lower the marginal price of RECs in the market. While there is no specific evidence on record demonstrating that the addition of the proposed facility's 50 MW would necessarily lower the price of RECs, increasing the competitiveness of the REC market, and adding a new source of REC supply should - all else being equal - place downward pressure on marginal prices for RECs in the long run.

The extent to which the proposed project would or would not be carbon neutral depends on a number of factors related to at least (1) the source of the biomass, (2) the sustainability and permanence of the biomass supply over the life of the project, and (3) the interaction of the emissions from the proposed facility with regional and (future) national carbon control programs. While the Company has presented information relevant to certain of these points, the degree of uncertainty with respect to items (2) and (3) prevent the Department from reaching a conclusion on the likely carbon impact of this facility over the life of its operation. In particular, while the Company has made representations as to the likely characteristics and longevity of its biomass supply source, there is no contractual guarantee that the facility will be supplied from such sources over the lifetime of its operation. Nevertheless, the Department finds that the facility could be considered carbon neutral for at least its early phase of operation, based on information presented by the Company on the initial source of the biomass – wood waste from other economic activities – and the expectation (and initial expression of interest from suppliers) that this source would be sufficient for plant operations for many years. As such, the proposed project would help meet energy demand while at least initially providing carbon control benefits, consistent with the Commonwealth’s statutory mandate to reduce greenhouse gas emissions under the Global Warming Solutions Act.²¹

The Company has maintained that the proposed project is needed for regional reliability. In support of this, the Company asserts that a need for new capacity could arise in

²¹ Chapter 298 of the Acts of 2008, signed into law by Governor Deval Patrick on August 8, 2008.

2010, and could reach 4000 MW in 2015 or earlier, based on projected peak electricity demand and currently known generation availability for those years. Expected to be on line in 2010, the proposed project would constitute new capacity able to help serve the identified reliability need in 2010-2015 and beyond. The Department agrees that, should the project come on line, it would reduce the need to add capacity to meet future load growth in New England by 50 MW, and would at that time contribute to meeting the region's resource needs and maintaining the reliability of the regional electric grid. However, the Department notes that the project is one of many new generating projects and energy resource measures that are currently proposed to meet ISO-NE's projected reliability need. Consequently, while the proposed resource could contribute to the future reliability of New England power system operations, it is also likely that system reliability would be sufficient absent development of the Russell Biomass facility.

With regard to cost, the Company provides a 2006 estimate of \$600 million in savings from a hypothetical addition in 2005 of 1000 MW of new baseload generation, and translates this into a \$30 million (five percent of \$600 million) cost savings associated with the proposed facility (which is 50 MW, or five percent of 1000 MW). We note that the possibility of cost benefits is similar to the possibility of reliability benefits discussed in the preceding section. Namely, the Department agrees with the Company that the addition of baseload capacity to the generation mix – provided it is priced lower than marginal generating capacity – would provide cost benefits to electricity customers by displacing higher-priced generation at certain times

throughout the year.²² Consequently, to the extent that the owners of Russell Biomass bid operation of their facility at infra-marginal prices, they could contribute to a reduction in the marginal wholesale price of electricity in certain hours. We note, however, that the project is not the only potential generating resource that could provide such benefits, and it is difficult to conclude based on the evidence before us that - absent development of the proposed facility - the region would not obtain the same wholesale price benefits through the development of alternative infra-marginal capacity resources.

Diversity of generation supply is generally assigned a number of benefits and characteristics. For example, diversity in size and number of generating resources can mitigate the risks of over-reliance on too small a number of large generating resources; diversity in location of generating resources can mitigate the risks of events affecting supply in a specific geographic location. Similarly, diversity in fuel supply can mitigate the risks to reliability associated with over-reliance on the supply of fuel from a specific location, and/or the risks to price associated with over-reliance on a single fuel for price formation. Unfortunately, quantifying the actual risks associated with heavy reliance on a given fuel, and thus the potential benefits of reducing such reliance at the margin, is fraught with speculation about future supply conditions and uncertain fuel price forecasts, events with extremely low

²² The Department notes that Russell Biomass has offered to set aside one MW of capacity for the Russell Municipal Electric Light Department and has estimated the potential cost savings to be \$200 per year for the average household. This set-aside may provide a lower cost to the town for energy supply, depending on the long range forecast for energy prices and at what price Russell Biomass ultimately decides to offer the capacity to the town.

probability, and about quantifying the value of protecting against loss of load or temporary spikes in prices. Consequently, the value of “fuel diversity” is most often represented in qualitative terms – that is, we know that diversity is good, and something that increases diversity, all else being equal, is better than something that does not.

In this case, it is clear that adding a biomass resource to the region - assuming it is in place of additional gas-fired generation - would reduce our region’s reliance on natural gas for electricity generation. Consequently, while we can not quantify the magnitude of the impact or conclude that it is significant, the Department finds that the proposed facility would likely increase the diversity of generation supply in the region, and could thereby contribute to improving power supply reliability.

In sum, the Department finds that the proposed facility has the potential to provide energy benefits for Massachusetts, in that development of the facility could: supply added renewable energy resources, potentially providing downward pressure on the price of RECs in New England; help meet electricity demand in a manner that at least initially provides carbon control benefits, consistent with the Commonwealth’s mandate to reduce emissions of greenhouse gases over time; contribute to maintaining the reliability of the bulk power system and potentially lower wholesale prices in some hours; and help provide a more diverse electricity supply which may provide a measure of protection against possible fuel supply disruption.

B. Impacts of the Proposed Use

1. Traffic

a. Company Position

i. Construction Traffic

With regard to construction traffic, the Company calculated the Level of Service (“LOS”) on Main Street in Russell based on a daily workforce of 200, with 150 vehicles arriving during the daytime peak hour and 50 arriving prior to or after the peak hour (Exhs. DPU-42; DPU-71; Tr. 2, at 290-291).²³ The Company assumed no car pooling (Exh. DPU-71). The Company indicated that, based on its LOS analysis, there would be no need for any traffic mitigation during construction of the proposed facility (Tr. 3, at 373).

ii. Operational Traffic

While operating, the proposed facility would burn approximately 2,000 tons of wood daily (Exh. RB-1, at 5). To keep the facility supplied with fuel, Condition 2 of the Special Permit issued by the Town allowed up to 60 semi-tractor-trailer wood fuel deliveries per day (120 truck trips) Monday through Friday (Exh. RB-1(1)). The Company acknowledged as early as September 2005 that this increase in existing truck traffic “would have a significant impact on Main Street residents” (Exh. DPU-EX-3, at 20). The Company now seeks permission from the Department for a greater number of trucks than initially proposed: an average of 75 to 80 fuel trucks per day (150-160 truck trips) (Exh. RB-1, at 5; Tr. 4, at

²³ Traffic conditions on a roadway and at intersections are represented by the letters A through F on the LOS scale continuum, where LOS A represents a free flow condition with minimal delays, and LOS F represents forced flow or breakdown conditions.

517).^{24, 25, 26} Based on the average of 160 trips per day, one truck would travel Main Street on average approximately every four minutes (Exh. CHI- 1; Tr. 2, at 330; Tr. 4, at 515-517).²⁷

The Company acknowledged that the daily volume of 75 to 80 trucks is an annual average, not a maximum daily volume, and that there will be days and weeks when the number of trucks will either fall below or exceed this average (RR-DPU-2; Tr. 4, at 517). The Company noted, for example, that the daily volume would exceed 160 trucks 30 percent of the time (RR-DPU-2). To reflect this operational issue, the Company committed to (1) allowing no more than 120 truck deliveries (240 trips) in a one-day period, and (2) allowing no more than 550 truck deliveries (1,100 trips) in any five-day period (*id.*).²⁸ In addition to tractor-trailer fuel delivery trucks, four pick-up trucks per day for ash removal (eight one-way trips), and an average of 23 employee automobiles per day (46 one-way trips) would be expected daily (Exh. RB-1, at 60).

²⁴ Deliveries would occur five days a week, between 6:00 a.m. and 5:30 p.m., with the exception of eight holidays (Exh. RB-15; RR-DPU-2).

²⁵ The Company explained that the figure of 60 deliveries assumed the use of construction and demolition (“C&D”) material. The Company stated that because of its subsequent agreement with the Town not to burn C&D material, it would need to replace the C&D material with other, heavier, wood products, and as a result would require more deliveries (Exh. RB-1, at 62).

²⁶ See Attachment A for a comparison of Special Permit Condition 2 and proposed Directive 2.

²⁷ The Company explained that the actual number of trucks per hour would vary based on a number of factors (Exh. CHI-1).

²⁸ The Company asserted that the variations in the delivery numbers would not change traffic impacts because Main Street has the physical capacity to accommodate peak truck delivery days (RR-DPU-2).

The Company asserted that Main Street can physically handle the proposed volume of project traffic (Tr. 3, at 281, 283). In support, the Company provided an LOS analysis for Main Street and Route 20, with and without the proposed project (Exh. DPU-3, at 12-4). The impact of the proposed project was modeled on total daily added traffic of 220 vehicle trips (Exh. DPU-3, at 12-3; Tr. 10, at 1537-1539). The Company indicated that the LOS analysis involves several factors and equations inherent in the software that converts heavy vehicles such as trucks and buses to passenger car equivalents to account for the additional length of the larger vehicles and their slower traffic speeds (RR-DPU-5). The Company explained that it is not a simple, direct correlation involved in the equivalent conversion, and that the software incorporates a complex calculation that is not based on a particular size truck or bus (Tr. 11, at 1766).²⁹ The LOS analysis indicated that both Main Street and Route 20 currently operate at a favorable LOS during the afternoon period: LOS A and LOS C, respectively (Exh. DPU-3, at 12-4). The LOS analysis indicated that with the addition of traffic generated by the proposed facility while operating, the Main Street LOS would change from A to B, and the Route 20 LOS would remain the same (id.).

The Company counts of current traffic on Main Street provided a breakdown by cars and trucks, and further broke down the trucks by axle size (Exh. RB-4). The Company indicated that the majority of the wood deliveries would be in large vehicles such as five-axle and six-axle trailer trucks (Exhs. RB-4; DPU-46; Tr. 2, at 263). Based on these two

²⁹ The Company provided an example of the conversion rates which, when analyzed by Department staff, showed a 2.4 factor for existing conditions and a 1.6 factor under conditions with the proposed facility (RR-DPU-5).

categories, the Main Street count of trucks (by trips) that the Company asserted are similar in type to the proposed biomass fuel trucks was 51 (Tr. 2, at 263)

The Company asserted that the volume of traffic generated by the plant would be similar to that generated by the Westfield Paper Company when it was in operation at the same site (Exhs. RPB-20; DPU-45; RPB-23; Tr. 2, at 251). The Company acknowledged that actual data on the amount of traffic generated by Westfield Paper is not available (Exh. RPB-23; Tr. 2, at 251). The Company's witness calculated a traffic estimate for Westfield Paper based on the Institute of Transportation Engineers Trip Generation Manual ("Trip Generation Manual") (Exh. RPB-23; Tr. 2, at 251-252). The Company stated that the Trip Generation Manual calculates the number of vehicle trips that a facility would generate by: (1) assigning a standardized Land Use Code ("LUC") to the facility in question; and (2) multiplying the statistically derived trip generation rate for that LUC by the estimated number of facility employees or the facility's square footage (Exhs. RB-4, Tab 3, at 3; RPB-23; RB-4, at 5-6; Tr. 2, at 251-253).³⁰ The Company estimated that Westfield Paper employed approximately 125 people during peak operation; thus, multiplying 125 times 2.1 vehicle trips, the Company calculated that approximately 263 daily vehicle trips per day were generated by Westfield Paper (Exh. RPB-23). The Company acknowledged that the 2.1 vehicle trip multiplier includes all types of vehicles and does not break them down by category; thus, it is not

³⁰ The Company categorized Westfield Paper as Land Use Code #140 (manufacturing facilities) and stated that the Trip Generation Manual assigns to that category of use an average daily trip generation rate of 2.1 vehicle trips per employee (Exhs. RPB-23; RB-4, at 5-6; Tr. 2, at 251-253).

possible to tell how many of the 263 calculated trips were truck trips and how many were car trips (*id.*; Tr. 2, at 253).

The Company stated that the fuel delivery trucks would have a maximum overall length of 65 feet, a maximum width of 8½ feet, and an approximate weight when loaded of 80,000 pounds each (Exh. DPU-43). The Company asserted that Main Street meets or exceeds the minimum pavement width needed to accommodate two-way travel with parking on one side of the road for all vehicle types (Exh. DPU-72). The width of Main Street ranges from 27 feet at its narrowest to 32 feet at the Westfield River bridge, and the sidewalks are five feet wide (Exh. DPU-43). The Company stated that the Massachusetts Highway Department (“MHD”) recommended roadway design guidelines specify a minimum width of nine feet for travel lanes and seven feet for paved parking lanes, or a total width of 25 feet for two travel lanes and one parking lane (*id.*).³¹ Thus, the Company asserted, even at its narrowest point (27 feet wide), Main Street meets the minimum MHD design guideline width of 25 feet and would be able to accommodate the fuel trucks (Exh. DPU-72).

The Company noted that the line of sight turning onto Route 20 from Main Street is not optimal, but that the project-related traffic would not affect existing sight lines (Tr. 3, at 381). The Company asserted that there is no need to mitigate project traffic impacts, but offered to make six voluntary improvements to Main Street (RR-DPU-6; Tr. 2, at 316-318; Tr. 3, at 365). The proposed modifications would include enhancing the curb radius for turning from

³¹ The Company cited the MHD’s 2006 Project Development and Design Guide (Exh. DPU-43).

Route 20 to Main Street; shifting and re-striping the travel lanes on Main Street to eliminate parking on one side of the street; improving existing crosswalks and signage; upgrading and better defining parking spaces; and funding additional off-street or widened parking spaces in the Main Street village area (RR-DPU-6; RR-RK-4; Tr. 2, at 316-318).

The Company stated that there would be no queuing of delivery trucks on Main Street, pointing to proposed Directives 2 through 7, which prohibit trucks from parking on any town street and from making any deliveries before 6:00 a.m. (Exhs. RB-15; CHI-13; Tr. 10, at 1501). In addition, the Company stated that there is approximately 2000 linear feet of circumferential roadway around the on-site fuel piles, providing sufficient space for a single line of up to 20 trucks, or a double line of 40 trucks, to wait on-site while waiting to unload fuel (Tr. 3 at 392, 399).³²

b. Intevenor Position

An independent study conducted for the Town of Russell, and paid for by the Company, (“ARI Report”) concluded that the most significant impact of the proposed project on the town would be the increased safety hazard, noise and vibration from the project’s truck traffic on Main Street (Exh. DPU-RU-1(2) at 4). The ARI report recommended that a fuller safety hazard evaluation be conducted (id. at 1, 5). The Report noted that while reasonable

³² The Company indicated four to five trucks per hour can be unloaded at each of the three dumpers on-site, for a total of 12-15 trucks per hour (Tr. 3, at 399). The Company estimated the total time required to unload a fuel truck is approximately 12-15 minutes, from entering the site to unloading, assuming use of whole-truck dumpers, wherein the entire truck is backed up to a platform and it is then raised 35 to 40 degrees (Tr. 3, at 394-395, 399-400).

measures had been proposed to mitigate traffic impacts, the impacts would be noticeable and lasting (*id.*). Further, the author of the ARI Report stated that there were no obvious forms of additional mitigation that could lessen the traffic impacts (Tr. 9, at 1224).

Three intervenors introduced into evidence a video containing a visual demonstration of both a 64- and a 65-foot semi-tractor trailer-truck³³ turning, passing, and traveling on both Main Street and Route 20 (Exhs. UNG-JO-1; UNG-JO-1(1)).³⁴ The drivers of the trucks (“truck drivers”) appeared as witnesses on behalf of the intervenors during the hearings; they stated that they deliver wood fuel to biomass plants in New Hampshire and Vermont using the trucks in the video (Exh. UNG-JO-1). The truck drivers indicated that the trucks can carry a gross weight of up to 104,000 lbs, which is the equivalent of approximately 20 cars, and that the trucks measure 9½ feet in width from mirror to mirror; the drivers testified that a

³³ These types of semi-tractor-trailers use a 45-foot trailer, which the owner of TJ Bark Mulch, James Oleksak, stated is the most commonly used size (Exh. UNG-JO-1). He stated that, in general, 48- and 54-foot trailers also can be used for fuel delivery to biomass plants (*id.*).

³⁴ The demonstration was conducted by TJ Bark Mulch Trucks. The demonstration was conducted by three professional truck drivers, Randy Purinton, Robert Kiosk, Dave Elliot, and Mr. Olesak (Exhs. UNG-RP-1; UNG-RK-1; UNG-JO-1; UNG-DE-1). Mr. Purinton has delivered wood fuel to the Rygate biomass plant in Rygate, Vermont; Mr. Kiosk has delivered wood fuel to the Hemphill plant in George Mill, New Hampshire; and Mr. Elliot has delivered wood fuel to Rygate, the Burlington Electric plant in Burlington, Vermont, and the Gilman plant in Gilman, Vermont (Exhs. UNG-RP-1; UNG-RK-1; UNG-DE-1). Video provided by the intervenors demonstrating one and two tractor-trailer trucks traveling on Main Street included (1) a view of one truck in a travel lane, with a car in the other travel lane and a car in a parking lane; and (2) a view of two trucks traveling in opposite directions along Main Street, with one lane of parking (Exh. UNG-JO-1(1)).

clearance of one to 1½ feet would be required between a truck and a parked car (Tr. 7, at 842).

Referencing the video of the Main Street demonstration, the truck drivers asserted that: (1) with cars parked on the north side of Main Street, there would be insufficient room for two fuel delivery trucks to pass each other on Main Street; (2) with two fuel delivery trucks approaching each other on Main Street, there would be insufficient room to pull over and let emergency vehicles pass; (3) if there were an accident or other emergency on Main Street, there would be insufficient room for a fuel delivery truck to turn around; (4) there is not enough room for the trucks to turn from Route 20 northbound onto Main Street without crossing the center double yellow line; and (5) there is not enough room for the trucks to safely turn from Main Street onto Route 20 (Exhs. UNG-RP-1; UNG-RK-1; UNG-DE-1; Tr. 7, at 852).

The truck drivers noted that presently there is not a good line of sight when making a left turn from Main Street onto Route 20 southbound (Exh. UNG-JO-1; Tr. 7, at 859). The truck drivers referred to the video and noted that a right hand turn from Route 20 northbound to Main Street cannot be made without crossing the center line or going over the curb (Tr. 7, at 854-856). The truck drivers noted that with the exception of the Burlington Electric plant in Burlington, Vermont,³⁵ all of the other biomass plants they deliver to have dedicated access

³⁵ The 50 MW Burlington Electric biomass plant receives 75 percent of its wood fuel by rail and 25 percent by truck (Exh. RB-112-1). The Company stated that, as a condition to operate, Burlington Electric was required to provide the specified percent of rail deliveries to mitigate traffic impacts (Tr. 4, at 509).

roads thereby avoiding interference with local traffic; therefore, there would be no problems at those facilities with emergency vehicles or insufficient turning radii on local roads (Exhs. DPU-IG1-7; DPU-IG1-8; Tr. 7, at 836-837).

With regard to the timing of fuel deliveries, the truck drivers stated that it is customary in the industry for drivers to make their first delivery to a plant as early in the morning as possible, so that they can deliver another load in the same day (Tr. 7, at 827). Thus, they stated, a large number of fuel deliveries to the Russell site typically would occur first thing in the morning, deliveries then would taper off, and another large number of deliveries would occur in the afternoon (id. at 825-827). Because of this delivery pattern, the drivers asserted, trucks likely would be waiting outside the gate to the Russell site prior to its opening at 6:00 a.m.; and, because the Russell site lacks a dedicated access road, the trucks would of necessity park or idle on Main Street while waiting (id. at 826-828, 831). The truck drivers asserted that the waiting trucks likely would be idling, as the five-minute federal Department of Transportation (“DOT”) limit on idling is not enforced, nor is it generally complied with, because restarting an engine causes wear and tear (id. at 802-803). In addition, the drivers noted, truck drivers generally leave engines running in the wintertime because (1) it is difficult to start a diesel engine in cold weather, and (2) the cabs are kept warm (id. at 803). The truck drivers testified that they have never been prohibited from idling at any plant to which they have delivered (id. at 851).

With regard to historic traffic use, Ms. Taverna, a member of the Planning Board and long term resident of Russell, stated that the former traffic manager of Westfield Paper

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<p align="center">Special Permit Conditions Approved by Town</p>	<p align="center">Company Proposed Directives (Revised 11/13/07)</p>
<p>(1) Notwithstanding any future ammendment to the Russell Zoning By-Law, Mass. G.L. c. 40A or any other legislative act:</p> <p>(a) the daily kilowatt generating capacity of the Biomass Plant to be constructed and operated shall be limited for up to 50 MW;</p> <p>(b) the tract of land on which the Russell Biomass facility is to be located shall not be altered or used except:</p> <ol style="list-style-type: none"> 1. As granted by this Special Permit 2. As shown on the Special Permit Application Plan entitled Russell Biomass Facility referenced above; 3. In accordance with subsequent plans and amendments to the Special Permit approved, in writing, by the ZBA and, to the extent necessary, the Planning Board. <p>(c) the entire tract of land and buildings to be constructed shall not be used, sold, transferred or leased except in conformity with this Special Permit. If the Applicant petitions for ammendment to this Special Permit, it must submit all plans and information to the change as required by the Zoning By-Law and requested by the Planning Board and the ZBA, as the case may be.</p>	<p>(1) (a) The design net generating capacity of the Facility will be 50 megawatts:</p> <p>(b) The Facility shall use wood fuel as defined in 310 CMR 7.00;</p> <p>(c) Russell Biomass shall not use the tract of land on which the Facility is to be located except as described in the Petition for the zoning exemption.</p>
<p>(2) The average daily operational vehicular traffic to and from the facility be limited to a maximum of 60 semi-tractor trucks for fuel delivery, 4 semi-tractor trailer trucks for ash removal and 4 semi-tractor trucks for log storage. Additional other commercial trucks (other than semi-tractor trailer trucks) not to exceed 5 per day are allowed. Additionally, an average of 23 cars (for employees etc.) will be allowed per day with visitor access to the facility allowed as required. The term Semi-Tractor Trailer Trucks as used herein means a truck with a gross vehicle weight of 26,000 lbs. or greater</p>	<p>(2) The average daily operational vehicular traffic to and from the facility shall be limited to a daily average of 75 to 80 (both Semi-Tractor Trucks and smaller commercial trucks) for fuel delivery, and four Semi-Tractor Trailer Trucks for ash removal. Additionally, an average of 23 cars (for employees etc.) will be allowed per day with additional visitor access to the Facility allowed as required. The term Semi-Tractor Trailer Trucks as used herein means a truck with a gross vehicle weight of 80,000 lbs. or greater</p>

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<p align="center">Special Permit Conditions Approved by Town</p>	<p align="center">Company Proposed Directives (Revised 11/13/07)</p>
<p>(8) Hours of operation during construction are from 7:00 a.m. to 5:00 p.m., Monday through Friday. No construction on the above cited holidays with the possibility of additional hours allowed if critical construction needs arise subject to the approval of at least two members of the Russell and three members of the Planning Board.</p>	<p>(8) Regular construction activities shall occur between the hours of 7:00 a.m. and 5:00 p.m. Monday through Friday. In compliance with DEP noise regulations at 310 CMR 7.10, no unnecessary emissions of sound from construction equipment will occur. Construction activities such as activities inside buildings and structures and shielded outdoor activities, are allowed at anytime. However absent extraordinary circumstances, any weekend, nighttime or holiday work shall be limited to quieter activities such as welding, interior work, electrical work, and installation of equipment, cabling and instrumentation. The following noisy activities may not be performed during nighttime, weekend, or holiday construction absent extraordinary circumstances; operation of heavy machinery, pile driving, dynamic compaction, operation of cement trucks, soil drilling, truck or fuel unloading, operation of major hydraulic equipment, and use of cranes.</p>
<p>(10) The cost of maintenance and repair of Main Street resulting from Biomass truck traffic shall occur following the completion of the facility's construction or on an as needed basis as determined by a joint meeting between the Biomass Facility's management and the Town of Russell Board of Selectmen. A Passbook Account (intended to serve as a revolving fund pursuant to G.L. Chapter 44, Section 53E½) for the Town of Russell as a special fund for road maintenance shall be started with an initial amount of \$100,000 from Russell Biomass, LLC which will be due and payable upon issuance of the building permit for the Facility. This fund to be augmented each year by \$10,000 for five years and reviewed every three years thereafter at which time new figures (of principal) and time periods for contributions and/or restorations of principal may be reestablished and required. At a minimum, the principal of the fund shall be restored within ten days by the Applicant with the same principal amount of any withdrawal (e.g. once the fund has been fully funded at \$150,000 and \$75,000 is withdrawn for road repair, the Applicant shall immediately restore the fund back to \$150,000). The Select Board shall use this account for road repair and maintenance as needed on Main Street only. The Applicant's failure to adhere to any term may result in suspension or revocation of the Special Permit.</p>	<p>(10) The cost of additional maintenance and repair of Main Street resulting from the Facility's truck traffic shall be funded by Russell Biomass following the completion of the Facility's construction as follows. A Passbook Escrow Account (intended to serve as a revolving fund pursuant to G.L. Chapter 44, Section 53E½) for the Town of Russell as a special fund for road maintenance shall be started with an initial amount of \$100,000 from Russell Biomass, LLC which will be due and payable upon issuance of the building permit for the Facility. The fund will be augmented each year by \$10,000 for five years of the facility. The principal of the fund shall be restored within ten days by Russell LLC with the same principal amount of any withdrawal (e.g. once the fund has been fully funded at \$150,000 and \$75,000 is withdrawn for road repair, the Applicant shall immediately restore the fund back to \$150,000, provided that the expenditures from such Fund in a given operating year not exceed the maximum amount of the fund, i.e., \$100,000 in the first operating year, \$110,000 in the second operating year, \$120,000 in the third operating year, \$140,000 in the fourth operating year, and \$150,00 for all other years beginning with the fifth operating year). The Select Board shall use this account for road repair and maintenance as needed on Main Street only, and shall make a reasonable determination as to the share of the maintenance or repairs applicable to the Facility.</p>

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<p align="center">Special Permit Conditions Approved by Town</p>	<p align="center">Company Proposed Directives (Revised 11/13/07)</p>
<p>(21) Russell Biomass Management shall meet at least semi-annually on mutually agreeable dates and locations with interested residents of Russell to discuss common problems or concerns relative to the Russell Biomass Facility. Resident of Russell, which shall include at least one member from each of the following boards: Zoning Board, Board of Selectmen, Planning Board, Fire and Police Departments.</p>	<p>(21) Starting from the commencement of construction until the start of Commercial Operations, Russell Biomass management shall meet twice a year on mutually agreeable dates and locations with interested residents of Russell and Town officials as suggested by the Selectmen to discuss common problems or concerns relative to the facility. The Selectmen may change the frequency of these meetings depending on the frequency and number of issues to be addressed.</p>
<p>(22) All noise study parameters shall be adhered to as outlined in the Noise Study Analysis done by Russell Biomass. If any other equipment is added, other than what is currently applied for in the original proposal, Russell Biomass must seek a modification of the Special Permit for the ZBA and Planning Board. Additional layering of insulation and buffering for the added equipment shall be required to such an extent that it does not exceed the maximum noise level as defined in the Noise Study Analysis.</p>	<p>(22) Russell Biomass will submit its Major Comprehensive Plan Approval Application to the Massachusetts Department of Environmental Protection and will adhere to and comply with all DEP requirements, conditions, and directives relative to noise emissions, noise mitigation and controls, and noise testing and monitoring.</p>
<p>(24) The Russell Biomass Facility shall be required to upgrade their continuous emissions monitors to maximum attainable technology standards as they are approved by federal and/or state agencies.</p>	<p>(24) The Facility shall be required to employ continuous emissions monitoring equipment as required by DEP in its approval of Russell Biomass's Major Comprehensive Plan Approval Application.</p>
<p>(25) Russell Biomass shall implement any necessary technology in order to guarantee that as a result of the Applicant's application, the Westfield River maintain a "Class B" status under any applicable state and federal law.</p>	<p>(25) The Facility shall be required to employ technology required in permits issued by DEP relative to the facility's impact on the Westfield River.</p>
<p>(27) All terms and conditions of this Special Permit shall be reviewed, jointly, by the ZBA and the Planning Board on a semi-annual basis with the Applicant at regular or special meetings of the boards (each being a "Review Date"). The ZBA and the Planning Board expressly reserve the right, at any Review Date, to further modify, amend and/or impose additional terms and conditions, as they reasonably determine, to this Special Permit.</p>	<p>(27) Russell Biomass shall provide the Board of Selectmen with a description of any proposed modifications or revisions to the Facility or its operations which constitute a significant and material change to the Facility and/or Facility operations as described in the Petition. Upon request, Russell Biomass will meet with the Board of Selectmen and/or other Town officials as suggested by the Selectmen to discuss any such proposed modification or revision to the Facility or its operations. In addition, before petitioning the DPU for any revision, modification, amendment or change to the Directives, Russell Biomass will present the proposed change(s) and the need therefore to the Board of Selectmen and/or other Town officials as suggested by the Selectmen, and will work with the Town to draft mutually acceptable language for any proposed Directive modification(s)/ amendment(s).</p>

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Special Permit Conditions Approved by Town	Company Proposed Directives (Revised 11/13/07)
<p><u>Specific Finding #3</u></p> <p>The Applicant will <u>not</u> be allowed to burn anything other than Virgin Wood. By eliminating the burning of construction and demolition materials by the Applicant, the Zoning and Planning Boards have addressed an important and major concern (potential hazardous air pollutants) expressed by most of the opponents to the project.</p>	<p>(1) (b) The Facility shall use wood fuel as defined in 310 CMR 7.00;</p>

Source: Exhs. RB-1(1); RB-15

Appeal as to matters of law from any final decision, order or ruling of the Commission may be taken to the Supreme Judicial Court by an aggrieved party in interest by the filing of a written petition praying that the Order of the Commission be modified or set aside in whole or in part.

Such petition for appeal shall be filed with the Secretary of the Commission within twenty days after the date of service of the decision, order or ruling of the Commission, or within such further time as the Commission may allow upon request filed prior to the expiration of twenty days after the date of service of said decision, order or ruling. Within ten days after such petition has been filed, the appealing party shall enter the appeal in the Supreme Judicial Court sitting in Suffolk County by filing a copy thereof with the Clerk of said Court. (Sec. 5, Chapter 25, G.L. Ter. Ed., as most recently amended by Chapter 485 of the Acts of 1971).