Palmer Renewable Energy has proposed to build a 38 Megawatt biomass power plant at 1000 Page Boulevard in the East Springfield neighborhood, just north of Palmer Paving Company. The project is one of several from Caletta Renewable Energy, a partnership of Palmer Paving Corporation and Barletta Engineering of Canton, MA. If it receives final regulatory approval, the $150 million dollar project would start operations in 2011.

Biomass plants work by burning organic material to heat water, with the resulting steam fed through a turbine to produce electricity. Exhaust from process would be filtered and cleansed before being expelled from a 275 foot stack. The facility would use approximately 900 tons of fuel per day, of which 700 tons would be positively picked construction and demolition debris and 200 tons would be green wood chips. The construction debris would be pre-processed offsite and delivered to the plant, with the total amount used annually by the plant accounting for nearly two thirds of the construction debris produced in the state of Massachusetts each year. This would be the only power plant in the state allowed to burn construction and demolition debris. Fuel delivery will require 126 daily trips by 20-ton trucks, with deliveries occurring between 6 AM and 7 PM, Monday through Saturday. Trucks would access the site from I-90 and 291 via Route 20 (Page Blvd).

The plant would create an estimated 50 full-time jobs, for which first preference will be given to Springfield residents. The plant and the city agreed to negotiate a tax agreement, with an estimated annual payment of $1 million. Palmer has also agreed to $667,000 in infrastructure improvements, of which $600,000 is for road paving, decorative streetlights, and planting of trees along streets. The remainder covers the demolition of an old firehouse and the installation of banners and signage. In addition, Palmer has made a number of other commitments, including reserving a portion of the power generated for purchase by the city, a $25,000 annual green education grant to the Springfield schools, and assistance with the city's waste wood management. Palmer has asked these expenditures to be taken into account during the negotiation of the tax payment.

While the project is privately financed, it has received a $250,000 development loan from the Massachusetts Technology Collaborative. Wood-burning power plants are also eligible for renewable energy credits, currently trading at around $50 per Megawatt-hour. This has drawn criticism from some environmental groups, who argue that biomass is less "green" than other forms of energy, like wind and solar, that are also eligible for renewable energy credits.

The plant is estimated to produce 470,000 tons of carbon dioxide annually, which would represent a 1.86% increase over the amount produced by power plants in the state, compared with the 0.28% increase it would represent in the state's power generating capacity. This is because biomass generates 1.5 times as much carbon dioxide per megawatt generated as coal, and 3-4 times as much as natural gas. The net carbon impact of biomass, however, depends largely on how its fuel is harvested. If the area cleared for fuel is immediately replanted with fast-growing trees, the new trees will absorb much of

the carbon released in burning. If these trees are later harvested for biomass fuel, the carbon is therefore "recycled" to some extent. Since carbon dioxide cannot be reformed into coal or natural gas like it can be into trees, fossil fuel plants cannot recycle their emissions in the way that biomass plants can. Raw emissions data therefore overstate the amount of carbon dioxide produced by biomass, because burning biomass does not release an entirely new store of carbon with every batch of fuel. Since the Palmer plant would rely largely on construction and demolition debris, which like coal cannot be replanted and fed off of previous emissions, it would be more like fossil fuel plants in this respect.

The plant would emit a number of chemicals besides carbon dioxide. A 2006 report by the Northeast States for Coordinated Air Use Management (NESCAUM) concluded that appropriately processed construction and demolition wood had similar emissions to "virgin wood". Dr. Ellen Moyer of the Western Massachusetts Green Consortium criticized the report, arguing that the NESCAUM study's conclusions were based on insufficient data. The plant is projected to emit 167 tons of carbon monoxide and 134 tons of nitrogen oxides – a contributor to acid rain and ozone formation – each year, equivalent to 0.29% and 1.13% of annual Hampden County emissions respectively. Emissions of particulates and hazardous air pollutants (HAP) are lower in absolute terms at 27 and 23.8 tons per year respectively. However, they would a larger proportional impact, each representing an increase of 3% over total emissions for Franklin, Hampshire, and Hampden counties. In addition, the Massachusetts Environmental Energy Alliance has argued that more reasonable modeling assumptions would raise predicted HAP levels to 27 tons per year, which would subject the plant to stricter regulations under the Clean Air Act. The American Lung Association gives Hampden County a 'C' for particulate pollution and an 'F' (along with the rest of the state) for high ozone days. Projected emissions for lead, arsenic, and mercury were all below EPA standards, although lead and arsenic levels did each approach the maximum allowed in a 24-hour period on at least one occasion.

At 200 tons of green wood chips per day, the plant would require 73,000 tons of wood per year, equivalent to between 1600 and 3600 acres of forest, depending on logging intensity, compared to the 29,000 currently logged yearly. (This does not include the 37,000-84,000 acres that would be needed to fuel the proposed biomass plants in Russell and Greenfield, which would not burn any construction debris.) The plant's demand for wood could be higher than this, if for example a fall in construction activity reduced the available supply of construction and demolition debris or the new demand from the plant drove up its price. Some environmental groups worry that this additional demand would lead to increased use of clear-cutting, in which all the trees in an area are cut down, which has a larger impact on the forest environment than other types of logging.

Community reaction has been mixed. The Republican endorsed the proposed plant in Russell, which would burn green wood rather than construction and demolition debris, while G. Michael Dobbs of The Reminder has opposed the Springfield proposal. A number of community groups have also come out against the proposal, holding a

community forum in June to present their arguments. Speakers were from such community groups as the Western Massachusetts Green Consortium, Massachusetts Forest Watch, and Concerned Citizens of Russell.

The proposal has already cleared a number of regulatory steps. The Springfield city council voted 7 to 2 to approve the special permit application last September. The State Office of Energy and Environmental Affairs granted a MEPA (Massachusetts Environmental Policy Act) certificate, waiving the requirement for an Environmental Impact Report (EIR). The proposal still needs to undergo an air quality hearing and a beneficial use determination hearing. The latter is necessary to reclassify construction and demolition debris as a biomass fuelstock for the Palmer plant, rather than municipal solid waste. There is currently a moratorium on new municipal solid waste incinerators in the state.

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