



Burgess BioPower, LLC

Bi-Annual Report Required by Public Utilities Commission Order 26,331

November 2, 2020



I. Background on the Facility

Finding a long-term solution to the operation of the Cumulative Reduction Factor (“CRF”) contained in the Power Purchase Agreement (“PPA”) between Eversource and Berlin Station, LLC¹ is paramount to Burgess BioPower’s continued operation. Before discussing the long-term viability of the plant, it is important to frame the economic benefits that the facility has historically provided and continues to provide to the state and region through ongoing efforts and ownership’s continued capital contributions to maintain a highly efficient, low emitting renewable energy resource. According to an Economic Impact Study first completed in 2017, and refreshed in 2020,² the economic and fiscal benefits of Burgess BioPower significantly exceed any costs associated with the facility’s impact on electricity prices in New Hampshire.

- On an annual basis in New Hampshire, Burgess BioPower contributes **240 jobs** (208 in Coos County), **\$14.6 million** in labor income, and **\$69.1 million** in output of goods and services statewide.
- In 2019, this economic activity produced an estimated **\$4.84 million in taxes, fees, and charges paid to the state and its local governments.**
- The **annual net economic benefit** of Burgess BioPower is **more than \$43 million.**
- New Hampshire’s total energy expenditures exceed \$1.9 billion annually, with only 1.34% of that attributable to Burgess, despite the fact that Burgess continues to be **New Hampshire’s largest generator of renewable energy.**
- Except for the period during which the Burgess facility was under construction and until the plant began full operation in 2014, **total employment in Coos County had experienced a precipitous decline.**
- After ranking 10th from 1991-2011, **Coos County jumped to having the 4th highest annual growth rate among NH counties between 2014 and 2018** (which coincides with the start of Burgess’ operation of the biomass facility).
- Compared to an equivalent natural gas-fired power plant, Burgess provides 65% more jobs (240 v. 85).

In addition to its important economic impact statewide, Burgess contributes significantly to the local Berlin economy through its payments-in-lieu-of-taxes (“PILOT”) agreement with the City of Berlin. In May 2018, Berlin completed a two-year, \$7 million capital improvement project for Route 16, which was funded in part by Burgess’ PILOT payments. In fiscal year 2019, these payments totaled \$1.2 million.

Without the revenue from Burgess’ ongoing PILOT payments, Berlin’s tax rate would have increased by 8 percent in 2019. Berlin taxpayers (with a home at median value of \$88,300) saved approximately \$287 in property taxes as compared to what they would have paid absent Burgess’ contribution to the tax base. Moreover, with Burgess’ PILOT agreement calling for escalating payments to the city through 2033, Burgess expects these savings to increase on an annual basis going forward, thus ensuring continued benefits to the city’s residents.

¹ Berlin Station, LLC is the site/facility owner. Burgess BioPower is the site/facility lessee.

² Gottlob, Brian. (2020). *The Impact of Burgess BioPower Operations on Berlin, Coos County, and The State of New Hampshire*. This document is not publicly available but is available upon request of the Commission or parties to the docket.

In 2019, Burgess also paid water and sewer fees of \$954,472, which accounted for approximately 30 percent of all water charges in the city and 10 percent of sewer fees. Given these percentages, without a doubt, Berlin property owners would also have seen water and sewer bills increase without the biomass facility.

Furthermore, in July 2020, Burgess BioPower made a payment of \$523,000 to the City of Berlin, the first payment to the city from the facility's sale of Renewable Energy Certificates ("RECs") as outlined in its PILOT agreement. City officials used the funds to reduce one of the state's highest property tax rates by a full dollar per thousand dollars of valuation and to purchase vital new equipment for the Public Works Department. Burgess is one of the only privately-owned power plants that not only pays taxes and fees, but also **shares its revenue** with its host community.

A year-to-date breakdown of Burgess' 2020 expenditures in key categories is shown below:

Expenditure	Amount
Taxes	\$1,100,000
Berlin Water Works	\$558,000
Berlin Pollution Control Facility	\$154,000
REC Revenue Sharing	\$523,700
Payments to other local businesses	\$762,000
Payments to other NH businesses	\$1,319,000
Wood purchases³	\$19,800,000

II. Status of the Low-Grade Wood Market

Although the low-grade wood markets in the northeast have been struggling for some time, the landscape changed dramatically in the first half of 2020. Historically low power prices and demand forced most of the other biomass power plants in New Hampshire to shutter their facilities. In addition, a pulp digester at the Pixelle Specialty Solutions mill in Jay, Maine had a catastrophic failure that caused one of the largest pulp mills in the region to cease operations. These events resulted in a flood of more than 2 million tons per year of wood chips coming into the market without a ready buyer. Burgess has worked diligently to maintain consistent procurement of about 800,000 tons per year of wood chips at a price that keeps harvesters and haulers in business. Burgess continues to fill its wood basket from more than 150 different suppliers and injects many millions of dollars per year into this market sector that needs financial support.

III. Additional Challenges Facing Renewable Energy Facilities

A. Regulatory Changes to the Public Utilities Regulatory Policies Act

Another key component to any discussion regarding a long-term solution to the Burgess facility is emerging policy and regulatory changes on the federal level that continue to impact renewable energy facilities. These changes are, to some extent, emblematic of the growing tension between

³ As the testimony at the hearing in DE 19-142 reflects, approximately 60% of Burgess' wood basket comes from NH suppliers.

the states' drive for cleaner resources and the federal policies that are not always aligned with the states' policies.

Most prominent among these changes is the Federal Energy Commission's ("FERC") Order 872 issued in mid-July by a divided FERC, which makes significant changes to the Public Utilities Regulatory Policy Act ("PURPA"). The Order implements changes to PURPA that, in the words of Commissioner Glick "administratively gut" PURPA. Importantly, these rule changes address a number of critical issues for renewable power producers looking to sell their energy to utilities.

One of the most important changes contained in the FERC order is that it eliminates the so-called "PURPA put," meaning utilities will no longer be required to purchase output from Qualifying Facilities 5 megawatts (MW) or larger in certain markets. It creates the rebuttable presumption that facilities larger than 5 MW have non-discriminatory access to the competitive markets and thus utilities are not required to purchase their output. Under the current rule, that rebuttable presumption applied to facilities greater than 20 MW. This is a critical change because it eliminates a secure source of revenue for many small to mid-size renewable projects. These rule changes are prospective in nature, and do not affect existing PPAs or other legally enforceable obligations entered into before December 31, 2020, but they do create a chilling effect on renewable resources that may be seeking alternatives to those mechanisms.

The second important change is that the Order authorizes states to determine the method by which utilities pay for energy, and to a lesser extent, capacity. Under the current PURPA standard, utilities pay small power producers their "avoided cost," either at the time of contracting or at the time of delivery. The new PURPA provisions allow states the latitude to use fixed, variable, or market-based rates for energy, at the time of contracting or delivery, which may adversely affect a renewable facility's revenue stream,⁴ and creates significant uncertainty for renewable resources seeking to move from contractual to market mechanisms.

B. President Trump's Executive Order: May 1, 2020

Another important policy development is President Trump's May 1, 2020 Executive Order seeking to protect the nation's electricity system from cyberattacks, which potentially places barriers on some imports from China and Russia. The order allows the Energy Secretary, in consultation with other officials, to prohibit acquisition, importation, transfer or installation of power equipment from an adversary that is determined to pose a risk of sabotage to the nation's power system. While the focus of this Executive Order is primarily on China and Russia, and to a lesser degree Korea and Iran, its scope could be expanded to include other countries.

The order defines bulk power equipment as items used in substations, control rooms, or power plants, including nuclear reactors, capacitors, transformers, large generators and backup generators and other equipment, and thus potentially affects renewable facilities such as Berlin Station.

⁴ While these changes will not have any direct effect on the existing PPA, FERC's PURPA changes potentially affect Burgess' ability to develop other renewable energy projects that might otherwise help to offset its obligations under the PPA. *See infra* section IV(B) discussing other potential economic opportunities.

The Executive Order also permits the government to identify any now-prohibited equipment already in use, and to develop strategies to work with asset owners to identify, isolate, monitor, and replace this equipment as appropriate.

Many details of the Executive Order are vague, including how the Department of Energy will treat transactions that are initiated after the May 1, 2020 issuance date but before the Secretary of Energy's regulations are established. What is equally unclear is how any new regulations will affect existing facilities and whether it will force renewable resources, like Burgess BioPower, to incur additional costs in replacing existing equipment deemed "prohibited," such as the plant's steam turbine generator, which was sourced overseas.

C. The COVID-19 Pandemic

Burgess' attention and efforts to develop a long-term solution were also affected by COVID-19. As an Essential Business, Burgess has continued to operate without interruption throughout the COVID-19 pandemic, in full compliance with alerts and mandates issued by the Governor's Office related to essential workers, N.H. Weights & Measures, North American Electric Reliability Corporation or NERC, , ISO-NE, and other key regulatory agencies. In addition to taking appropriate social distancing, masking, cleaning, and scheduling actions, the plant voluntarily modified its outage schedule and procedures for both the spring and fall outages (April and October, respectively), taking critical time and energy to develop and implement the following safety measures:

- Amended the contractor and visitor safety briefings to include a specific briefing on COVID precautionary measures;
- Implemented a requirement for all visitors and contractors to complete a screening questionnaire each day they come to the facility;
- Staged contractor work to minimize overlap (increasing downtime and budget);
- Rented a dedicated trailer for signing in/out during outages, with only one person at a time in the trailer; and
- Contracted for continuous, 24/7 cleaning of common surfaces throughout each entire 8-10-day outage.

COVID-related travel restrictions have also prevented Fuji's technicians from being able to travel to the US to assist with detailed internal inspections of the plant's steam turbine generator system which they supplied.

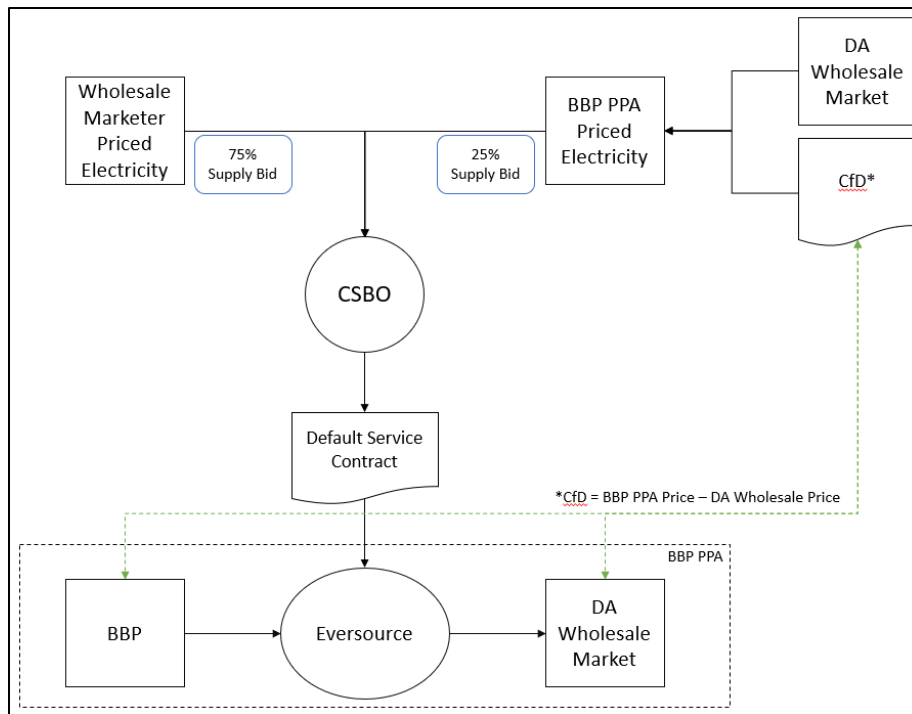
IV. Efforts to Develop a Long-Term Solution

A. Contract for Differences

CS Operations ("CSO;" the Manager of Burgess BioPower) has been diligently pursuing a market-based solution to mitigate the impact of the CRF as established under the facility's PPA. CS Berlin Operations ("CSBO;" Burgess BioPower's Operations & Maintenance provider) went through the lengthy and costly process of becoming a certified Competitive Electricity Power Supplier ("CEPS"), giving CSBO the ability to serve electricity directly to retail customers in New Hampshire. This process includes federal, state and Regional Transmission Operator ("RTO") approval in order to operate as a CEPS. More specifically, CSBO has FERC Market-Based Rate Authority ("MBRA") approval, state licensing approval, as well as ISO-NE membership approval.

An active license in the state of N.H. would enable CSBO to bid on Eversource’s electricity solicitation for default service to serve Eversource’s retail customers. CSBO proposed to enter into a Contract-for-Difference (“CfD”) with Eversource for Burgess’ electricity in order to net down the potential negative effects of the CRF.

In order for CSBO to submit a competitive bid for default service and still include Burgess BioPower’s cost of electricity in its supply stack, CSBO would need to dilute its cost of electricity supply, much like an entity might reduce its cost of capital in a financial transaction, or much like how the cost of Burgess’ power is already diluted by the other 98.66% of energy consumed in New Hampshire. Given the nature of Eversource’s default service, CSBO would source 3/4 of its supply stack from the wholesale market and 1/4 of its supply stack from Burgess. This would give CSBO the lowest cost of supply while still incorporating all of Burgess’ electricity. Burgess’ electricity would be linked to the default service through a CfD held with Eversource, the common party among Burgess’ PPA and default service. The CfD would be a fixed-for-floating swap contract between CSBO and Eversource to ensure Eversource would remain whole as a mutual stakeholder, the ratepayer would no longer bear the burden of the CRF calculation, and Burgess would retain maximum value for the electricity that it sells to Eversource through its PPA. An overview is shown below:



Efforts to advance this solution continued throughout 2019, with CSBO making significant progress in bringing this idea to fruition. In the first half of the year, CSBO served its first retail customer in an attempt to further validate the business model and gain operating experience. CSBO held numerous meetings with a wide spectrum of stakeholder groups to better understand key issues, concerns and discuss the collaboration needed to make this goal a reality. These meetings included two held with Eversource’s senior management team of Energy Services to discuss the plan, gather feedback and concerns, and lay out the details needed to reach execution. CSBO

engaged Sustainable Energy Advantage, a highly regarded New England-based renewable energy consultancy, early on in the process to validate the concept, refine its retail pricing model, and scrutinize the CfD concept and default service bidding strategy. CSBO also engaged Genscape Energy Management, a subsidiary of Wood McKenzie, to act as its operational energy advisor to aid in the start-up of a retail energy provider.

To further the concept and bring it closer to execution, in June 2019 CSBO conducted and submitted a default service shadow bid to Eversource to gauge interest and competitiveness of CSBO's bidding strategy. Throughout the second half of 2019, CSBO further refined its bidding strategy with energy consultants and improved the retail electricity bidding model. It began negotiations of wholesale trading contracts with multiple third-party wholesale trading entities. CSBO also conducted a second default service shadow bid exercise to refine further the retail electricity-bidding model but did not submit this bid to Eversource. In December 2019, CSBO responded to its first federal RFP for electricity service as a HUBZone certified business.

While Burgess continues to believe the CfD model has potential, some of Eversource's competitive bidding requirements, such as burdensome credit and collateral requirements and the bidding auction structure, pose barriers to CSBO's entry into the market. Without a change to some of those requirements, the restrictions will likely continue to bar Burgess' actual participation. Discussions with Eversource on revising or waiving some of these requirements have not advanced to the stage that make the CfD concept an immediately viable one.

B. Economic Development Opportunities Potentially to Offset PPA Costs

In parallel to the efforts discussed above, CSO has continued to invest significant time and money in other regional economic development projects to reduce and offset the costs of Burgess BioPower's power, including the following opportunities:

1. Co-development with an agricultural company for waste heat off-take

Having received an expression of interest by an indoor agriculture company to co-develop a facility on the Burges site that could use waste heat from the power plant, CSO worked with a number of contractors to prepare the site for development. Those tasks, totaling a cost of over \$215,000 to date, included the clean out and demolition of a former pulp mill warehouse to provide space for the greenhouse, geotechnical exploration to determine suitability of soils for building construction, preliminary design of a waste heat recovery and greenhouse heat supply system, development of preliminary site layout designs, and evaluation of storm-water management strategies and permitting requirements. The project is currently on hold due to challenges presented by site conditions and fluctuations in the indoor agriculture market.

2. On-site energy generation system

CSO assisted Burgess with evaluation of an on-site energy generation system that could back feed power to meet Burgess' parasitic energy demand at a lower cost, and/or support other development on the site such as the greenhouse mentioned above. CSO retained CHI Engineering of Portsmouth, N.H. to evaluate the technical feasibility and costs associated with (a) routing landfill gas from the Androscoggin Valley Regional Refuse Disposal District's ("AVRRDD") Mt. Carberry Landfill that is located approximately two and a half miles to the east of the Burgess site

and (b) building extensions from Portland Natural Gas Transmission System’s pipeline located a little more than one mile to the south of the Burgess site or from the Liberty Utilities’ distribution line located approximately three miles to the north of the Burgess site. While routing of the landfill gas to the Burgess site for co-firing with wood was deemed the most economically and technically feasible option to reduce operating costs at Burgess, the landfill gas remains under contract between AVRDD and Gorham Paper and Tissue through 2021.

3. Waste heat recovery and municipal snowmelt

Burgess has been working with the City of Berlin for many months to evaluate the feasibility, costs and benefits associated with developing a system to recover waste heat from Burgess to be used to melt snow from the city’s downtown roads and sidewalks. Similar systems have been demonstrated to improve economic activity, safety and environmental conditions in location such as Holland, Michigan and the University of Michigan’s East Lansing campus. The project would generate added revenue to Burgess through the sale of thermal RECs. CSO has invested significant time of in-house personnel to assist with the selection of a design engineer for the project; collection, review and analysis of Burgess design and operating data; and report preparation and support with the development of a grant application under U.S. Department of Transportation’s (“DOT”) Better Utilizing Investments to Leverage Development (“BUILD”) grant program. Although the project did not receive a BUILD Grant award in 2020, the city, Burgess and CSO continue to pursue viable financing pathways for the project and may consider resubmitting its application in the next DOT grant round.

4. Development of ground-mounted solar resources

CSO has also been working with Nobis Group of Concord, N.H. and New England Solar Garden Corporation of Portsmouth, N.H. to evaluate the technical feasibility and economic impacts of developing ground-mounted solar resources in the unused areas adjacent to Burgess BioPower. The solar resources could back feed power to meet a portion of the station’s parasitic demand, provide low cost power to a co-located business, or participate with the City of Berlin as a community solar garden under the Community Choice Power Law. The latter option could provide lower cost energy to city residents that is projected to save the community approximately \$200,000 per year. The project would also make beneficial use of currently unused and environmentally distressed land that includes a portion of the former pulp mill property that abuts the Burgess site to the north and/or the former Dummer Yard landfill located across Hutchins Street to the east of the Burgess site. Discussions regarding this project are in the early stages, but further demonstrate Burgess’ efforts to provide energy, economic and environmental benefits to the region and state.

V. Conclusion

As discussed above, Burgess BioPower has made considerable efforts to find a long-term, market-based solution to the operation of the CRF. It continues to seek alternative ways in which to mitigate the effects of the CRF on ratepayers and Burgess BioPower in a way that ensures the continued viability of the plant and the significant energy, economic and environmental benefits it brings to the region and state.