

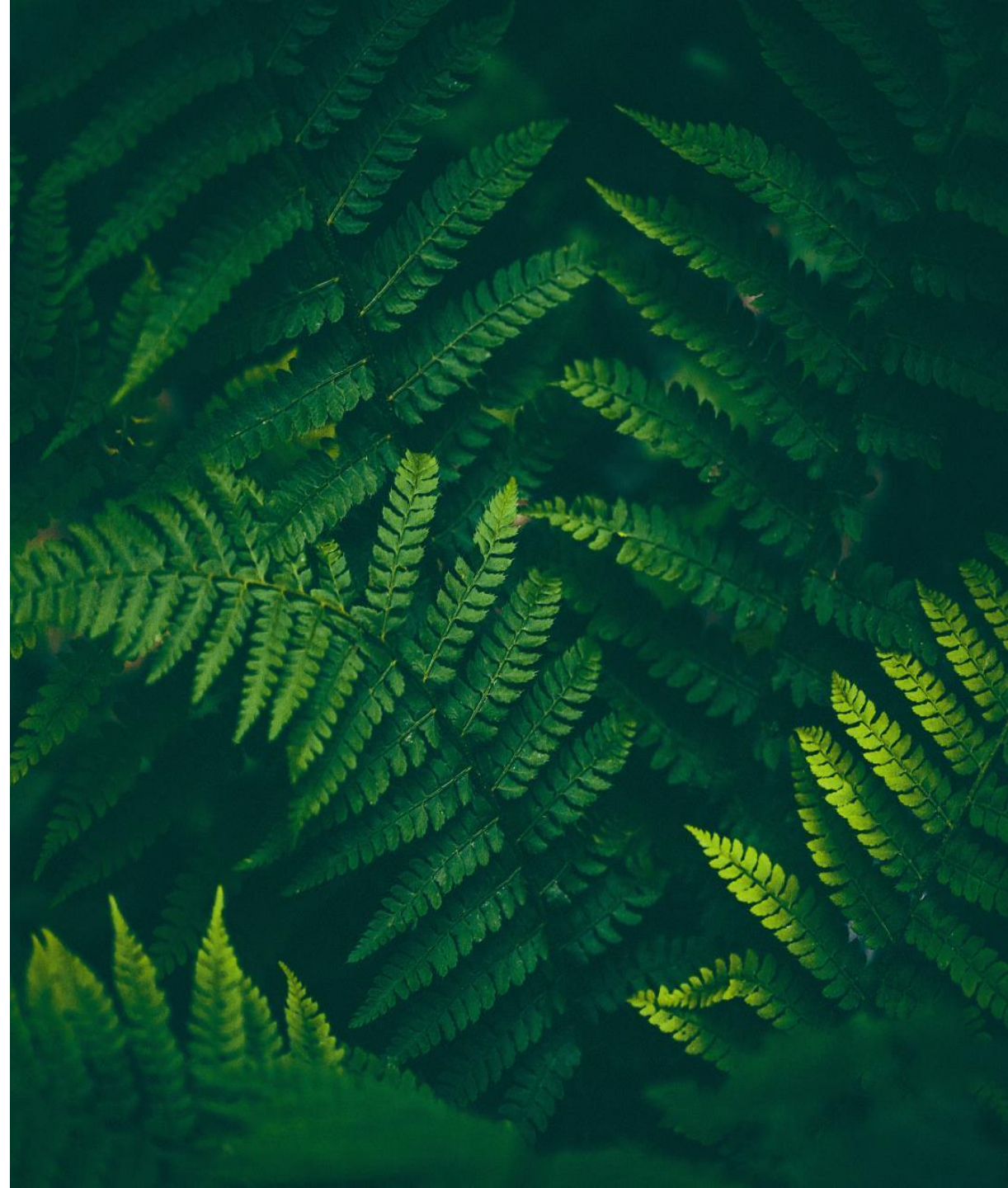
Ryegate Associates

*Your local Biomass
Power Plant*

2024 Legislative Amendments Requested for Act 155 of 2022

Senate Finance Committee

March 1, 2024



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Ryegate Biomass Facility



- Operational since 1993
- 20 MW Biomass Electric Generation Facility with a Selective Catalytic Reduction (SCR) emissions control system
- 160,000 MWh of annual baseload power
- 21 employees and approximately 250 people are employed in the production and delivery of 250,000 tons of whole tree chips
- \$2 million/year wages and benefits
- Distributes more than 4,000 tons of wood ash per year that is used in many beneficial recycling programs, such as organic fertilizer for farmers
- Contributes approx. \$350,000 annually in state and municipal taxes
- The levelized PPA price is \$100/MWh. RECs are shared 10% for Ryegate Associates and 90% for Vermont Utilities.

Legislative Timeline

- 2011 – Legislature enacts 30 V.S.A. 8009, establishing the baseload renewable power portfolio requirement
- 2012 – PUC sets PPA rate for 10-year period, expiring November 1, 2022
- 2021 – S. 1 enacted into law (Act 39). Extends current rate for two-year period, expiring November 1, 2024
- 2022 – S.161 enacted into law (Act 155)



Act 155 of 2022



- » Conditionally Extends the PPA to 2032
- » Requires Ryegate to Improve Plant Efficiency by 50%
- » Establishes a Timeline for Ryegate to Achieve this Efficiency Improvement
- » If Ryegate Fails to Meet the Timeline, the PPA is Terminated

Act 155 Timeline

- **July 1, 2023**- Ryegate owners submit a signed contract for construction of efficiency piece and engineering certification
- **Oct. 1, 2024**- Ryegate certifies main components have been completed
- **Nov. 1, 2024**- PPA ceases if prior two not met
- **Sep. 1, 2025**- DPS investigates and makes recommendation to PUC
- **Nov. 1, 2025**- PPA ceases if DPS does not make positive recommendation
- **Nov. 1, 2026**- PUC determines PPA Rate for Nov 1, 2026 to Nov 1, 2032

Project Team

» Key Team Members

- Wilson Engineering – Basis of Design and Certification
- Stantec & VHB – Civil Engineering and Permitting
- ALL4 – Air Quality Permitting Support
- RSG – Noise Study
- DRM – Legal / Regulatory

» Main Regulatory Approvals

- Act 250 Land Use Permit
- Local Zoning
- Construction Phase Stormwater Permit
- Operational Phase Stormwater Permit
- Air Permit Modification

» Facility contractor

PRODESA¹ (Cumming, GA) is an engineering and manufacturing company specializing in the turnkey supply of thermal drying plants. Available technologies for turnkey supply include low temperature belt dryers and direct drum dryers. Their main sectors of application include sawdust, shavings, and woodchips; bagasse alfalfa; fruit pulp; and starch.

[https://prodesa.net/pellet-production-plants/thermal-dying/](https://prodesa.net/pellet-production-plants/thermal-drying/)

Note 1: shortlisted contractor with whom facility construction contract is currently being negotiated

Waste Heat Recovery Project

- Ryegate will use recovered waste heat from the biomass plant to operate a wood residue dryer.
- There is an existing market and need for the dried wood residue:
 - Pellet production (plant being constructed onsite)
 - Dry chips for advanced wood heating
- » Power plant efficiency will be increased by over 50%
- » First US biomass power plant beneficially using waste heat on this scale – replicating common approaches in Europe



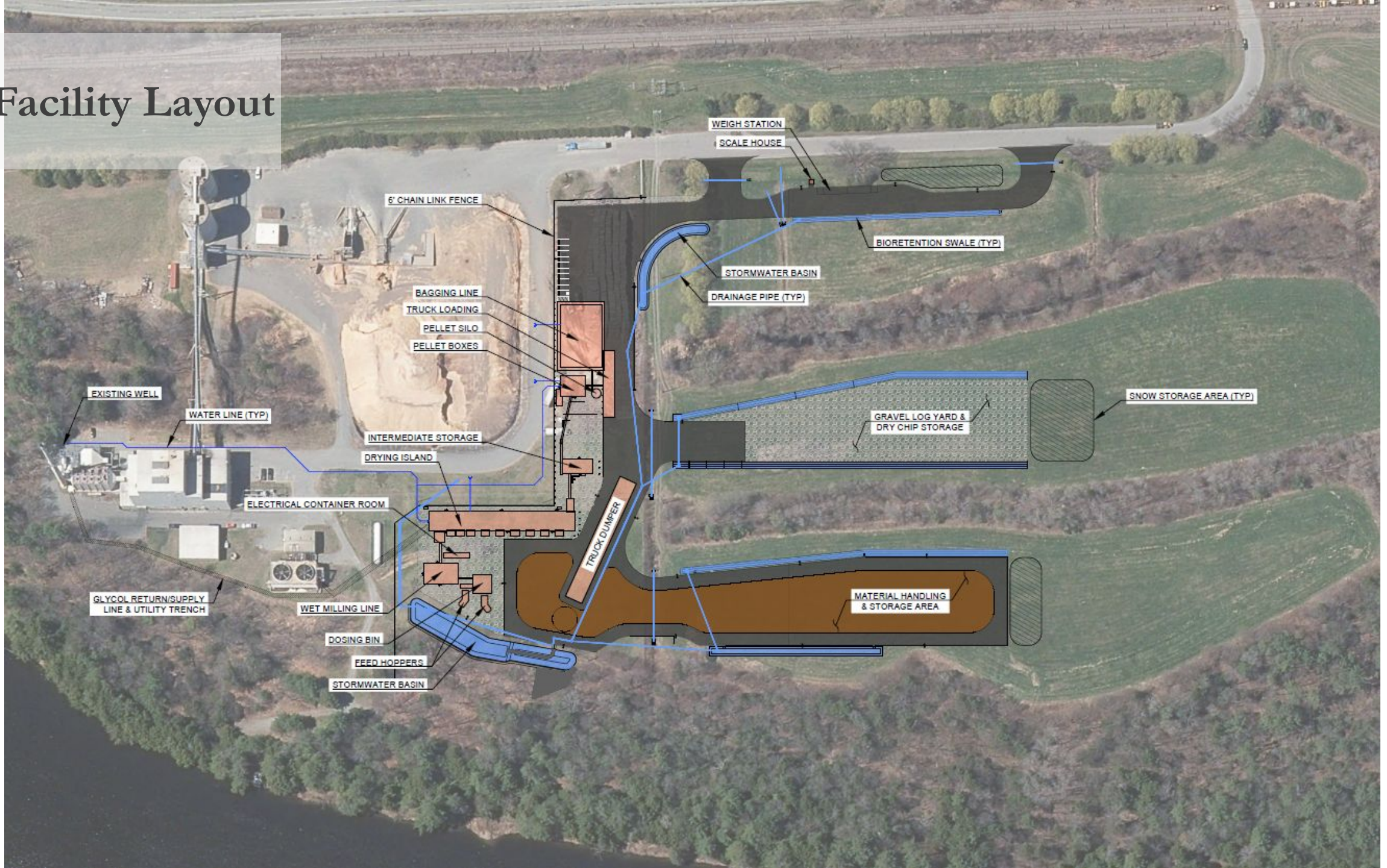
Efficiency Project

The Belt Dryer

- Low temperature dryer that utilizes recovered waste heat from the power plant.
- The warm air is drawn through a bed of wood chips along a web belt.
- The warm air gently dries the wood chips which limits emission of VOCs (Volatile Organic Compounds) into the atmosphere compared to typical high temperature dryers in the region.
- Potentially lowest emitting dryer in the region on a pounds of emissions per ton of wood dried basis.
- Distinctively different from traditional rotary drum dryers in the region.
 - No combustion emissions (no fuel burned for drying heat).
 - Lower drying temperature reduces volatilization of emissions (inlet temp. approximately 400-500 F lower).
 - Downdraft airflow pulls emissions through mesh filter.



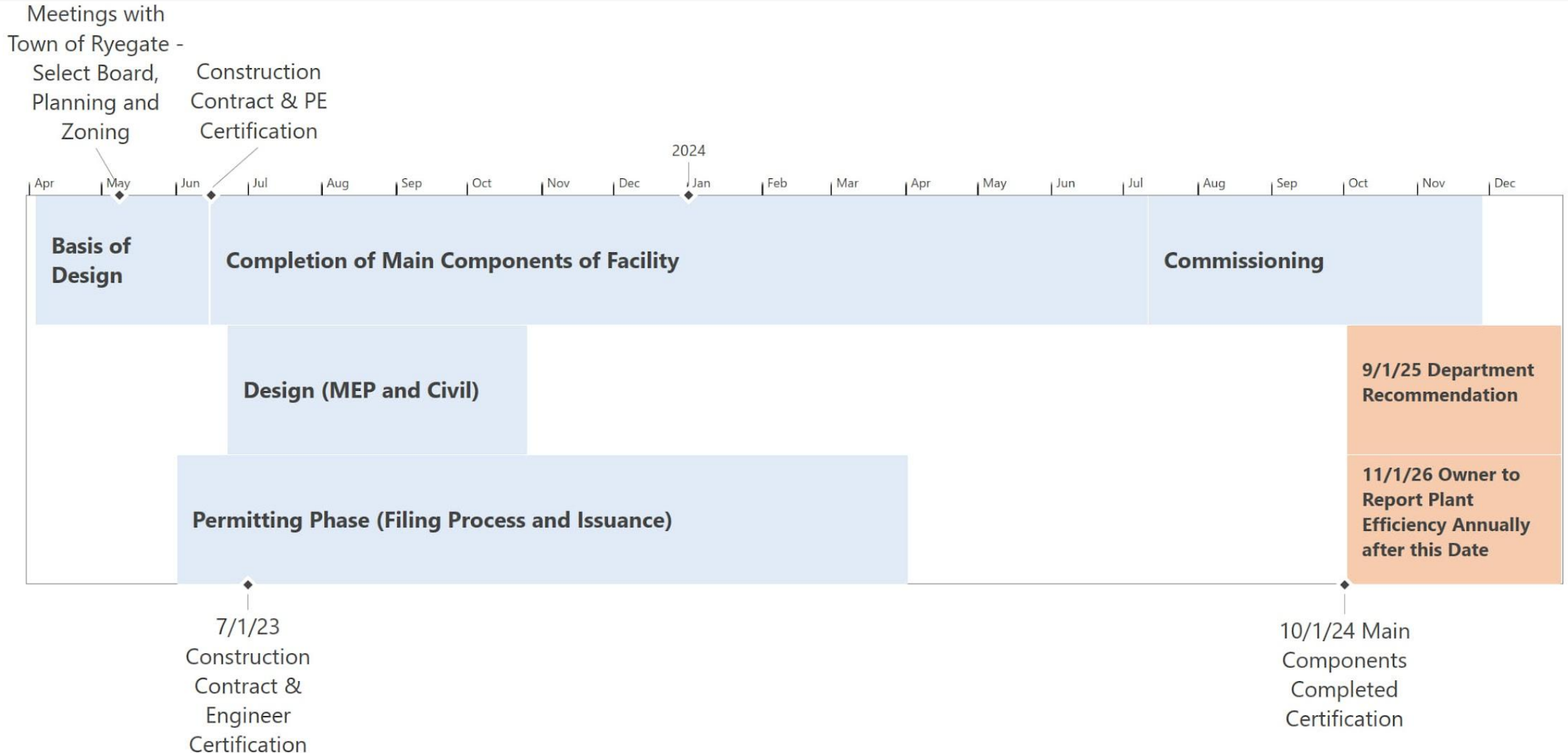
Facility Layout



Ryegate Act 155 Progress

- **June 29, 2023** – Ryegate filed signed construction contracts and an efficiency certification with PUC
- **December 11, 2023** – PUC determined that Ryegate’s submittal satisfied requirements of Act 155
- **December 27, 2023** – Operational Stormwater Permit Application submitted—under review
- **December 28, 2023** – Act 250 Application filed—under review
- **January 16, 2024** – Air Permit Application submitted—under review
- **January 31, 2024** – Construction Stormwater Permit Issued
- **February 1, 2024** – Ryegate secured municipal site plan and conditional use approvals

Project Implementation Schedule



Note: Dates shown on the bottom of the timeline are Act 155 Compliance dates

Project Permit Status

Permit/Regulatory Requirement	Permit Number	Regulator	Lead Entity	Application Filed Date	Est. Permit Issuance	Actual Issuance Date	Status	Notes
Act 250 Land Use Permit - MAJOR	7C1412	VT Natural Resources Board	DRM/VHB/St antec	12/28/2023	TBD	TBD	In Review. Site Visit and Public Hearing was 2/22/24	Act 250 Permit pending issuance of all Required Permits (Air Quality, etc) and Appeals Process
Construction Phase Stormwater Discharge Permit - General Permit	3021-9020	VT DEC Watershed Mgmt. Division	Stantec	12/22/2023	1/31/2024	1/31/2024	ISSUED	
Operational Phase Stormwater Discharge Permit (GP 3-9015)	3021-9050	VT DEC Watershed Mgmt. Division	Stantec	12/27/2024	3/1/2024		Technical Review	Email Correspondence w/ DEC
Air Quality Permit to Construct & Operate	AOP-24-001	VT DEC Air Quality and Climate Div.	All4, Inc	1/16/2024	6/15/2024		Administratively Complete. Public comment period starts after draft permit is issued (est. 3/7/24)	*Typically 30 day ANR Public notice followed by 45-day EPA Comment Period. May be able to overlap for a total 45 day notice period.
Local Zoning	2024-01	Town of Ryegate	Stantec	12/28/2024	3/1/2024	2/15/2024	Public Hearing: 2/1/2024. Draft Decision Issued in Favor of Project on 2/1/2024.	*15 day appeal period
MSGP	TBD	VT DEC Watershed Mgmt. Division	Stantec	When new MSGP Issues	--	--	Apply for coverage of existing facility and new facility under forthcoming new MSGP.	From Ashley Carver, DEC: Because they don't plan to be operational until Spring 2024 they do not need to apply for coverage right now.

Project Benefits:

Why is this good for the Town of Ryegate and Vermont?

- Employment :
 - 3-4 new long term direct jobs created
 - Stabilization and increase of forestry/logging jobs with the additional green biomass to be dried at Ryegate
- Economic contribution to the local economy
 - Additional Property Taxes (Approximately \$200,000)
 - Increased availability of dried wood for pellet producers (existing and future), helping to expand this renewable energy option as the Vermont implements the Clean Heat Standard – (opportunity to partially replace pellets imports from Canada with locally produced renewable fuel)
 - The project helps ensure Ryegate Associates' longevity and positive economic contributions to the Town of Ryegate and Vermont
- Environmental: (contribution to the reduction of carbon footprint in VT)
 - Wood residues will be dried from 45% to 12% moisture content- reducing the amount of truck loads for transportation
 - When using dried chips, boiler efficiency is higher with same amount of heat generated

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Ryegate
Associates

Thank You

