



PPA Production Volume Flexibility: TransAlta offers 'buy what you need' PPAs

Deep in the prairie of western Canada, 300-foot turbines rise high into the Alberta sky. Strong and steady winds buffet workers as they bustle about. White and yellow pickup trucks roll down grey gravel roads, passing field after field of recently harvested wheat, pale yellow against a cold white sky. Winter is here and the Garden Plain wind project, a 130-megawatt (MW) wind farm near Hanna, Alberta, Canada, is in the final stages of construction.

Alberta-based TransAlta Corporation, a long-time developer and generator in Canada, the US, and Australia, is building Garden Plain to help two corporations, Pembina Pipeline, a leading Alberta-based energy company and another undisclosed customer achieve their ambitious sustainability goals.

Early in 2021, Pembina pledged a 30 per cent reduction in its GHG emissions intensity by 2030, relative to its baseline 2019 emissions. The GHG reduction target will help guide Pembina's business decisions and improve its overall emissions intensity performance, while increasing its long-term value, and ensuring Canadian energy is developed and delivered responsibly. TransAlta is helping Pembina achieve this goal by supplying the company with clean electricity and environmental credits produced at the Garden Plain facility.

In May 2021, the two companies signed a power purchase agreement (PPA) which provides Pembina with cost-competitive renewable energy and environmental credits. The PPA also fixes the price for a portion of the power Pembina consumes. The 100 MW capacity from Garden Plain is expected to generate approximately 323,000 MWh of renewable energy and emission offsets each year over the 18-year term of the agreement.



A crane at the Garden Plain wind project site stands by waiting for a window when the wind will drop low enough to start lifting. The very thing that makes building a utility-scale wind farm on the wide-open prairie so challenging is the same reason TransAlta is here in the first place: strong and steady winds.

“We’re pleased to be working with TransAlta on their project and furthering our sustainability goals. Power Purchase Agreements are an effective tool to support the development of renewable energy infrastructure, lower emissions, and support the transition to a lower-carbon energy system,” says Scott Burrows, Pembina President and Chief Executive Officer. TransAlta subsequently contracted the remaining 30 MW from Garden Plain to an investment-grade globally recognized customer looking to reduce its operation’s carbon intensity. With Pembina as an anchor customer, opportunities for customers with smaller needs emerged.

TransAlta broke ground on Garden Plain in October 2021. Erecting turbines is the “tip of the iceberg” phase of project construction. Visitors to Garden Plain won’t see all of the work that comes before the turbines are built. This includes excavating turbine pads and foundations, digging cable trenches and carving out access roads across the 14,000-acre site for Garden Plain’s 26 turbines.

Garden Plain will use Siemens Gamesa turbines. Each has a nameplate capacity of 5 MW and stands 336 feet at the hub, with a total rotor diameter of 476 feet. The performance of these turbines will be optimized by a state-of-the-art meteorological tower designed to serve as an independent source to collect wind speed and weather data.

“Garden Plain shines as an example of how a customer like Pembina with a strong commitment to making real progress on sustainability can achieve their ESG goals by partnering with TransAlta. By right-sizing our PPAs to the volumes customers are seeking, we can use a single project like Garden Plain to serve multiple customers. Our expertise in developing and operating great projects that match customers’ needs continues to grow,” says Aron Willis, TransAlta’s Executive Vice President of Growth.

When Garden Plain reaches commercial operation early in 2023, the project will be TransAlta’s eleventh wind farm in Alberta, increasing its installed nameplate wind capacity in the province to over 800 MW, and the total nameplate capacity across Canada and the US to over 2000 MW. When the company’s projects in Oklahoma are completed, TransAlta’s wind fleet capacity will increase to over 2500 MW.