

Tokyo Bayside Wind Power Plant

In this project the Tokyo Metropolitan Government intended to construct a windpower plant in the Tokyo Bay Coastal Area as one of its measures to counter the global warming. This project represents a leading natural energy development project of the Tokyo Metropolitan Government, which is visually demonstrating natural energy development to Tokyo citizens and businesses, and also provides various information on windpower generation. A business group lead by the J-POWER and Toyota Tsusho Corporation has been awarded the contract for execution of this project by open bidding .



J-POWER and Toyota Tsusho Corporation established J-WIND TOKYO Co., Ltd. to be the executing agency of construction, management and operation of the windpower plant.

The Tokyo Bayside Wind Power Plant is close to Odaiba, and to the sea routes of ferryboats operating in the Tokyo Bay, air routes to and from the Haneda Airport, and to the coastal road planned for the future.

Naturally, the Tokyo Bayside Wind Power Plant is seen by a large number of people; therefore, the Tokyo Bayside Wind Power Plant is expected to greatly enhance people's understanding of windpower generation.



Table 1 Outline of the Windpower Plant

Location	Reclaimed land inside the Central Breakwater of the Tokyo Bay
Project period	20 years from the start of operation (March 2003 ~)
Power output	1,700kW
Windmill generator	VESTAS V52: 850kW × 2 units
Annual average wind speed	About 5.4m/s at 44m height
Capacity factor	About 16%
Annual electric power generation	About 2,500MWh (corresponding to annual consumption of about 800 average households)
Reduction of CO ₂ emission	About 1,700 t- CO ₂ /year (compare with oil thermal)
Total project cost	About 330 million yen
Purchaser of electric power	Sold totally to the Tokyo Electric Power Co., Inc.

Table 2 Major Feature of Generator Facility

Model	V-52 850kW	
Number	2 units	
Manufacturer	VESTAS WIND SYSTEM A/V (Denmark)	
Rated output	850kW	
Windmill	Type	Upwind propeller type
	Rotation	14.0 to 31.4 rpm (variable speed)
	Rated wind speed	16.0m/s
	Cut-in wind speed	4.0m/s
	Cut-out wind speed	25.0m/s
	Rotor diameter	52m
	Number of blades	3
	Blade material	GFRE
	Rotor height	44m
	Generator support	Steel tower (monopole structure)
Generator	Type	3phase wire-wound induction generator
	Output capacity	895kVA
	Voltage	690V
Foundation	Steel-pipe pile	800mm× 4/unit, t=9 to 12mm, L=45 to 48m
	Reinforced-concrete footing	8.5m × 8.5m × 2.0m/unit

