A framework for optimal design of wind farm layouts using a surrogate-based Dynamic Wake Meandering model is presented. The optimization platform is set-up as a hybrid strategy combining genetic search with the gradient-based algorithm. The design variables are the number of turbines in the layout and their relative position within the bounded area. The objective function is defined as the net present value of the wind farm’s profit, thus including the relevant expenditures throughout the farm’s lifespan. Results show that an optimal design is reached by maximizing investment and accepting a minor sacrifice of the wind farm performance.