Implementation of High-Precision Strong Wind Prediction System for the Kosei Line

West Japan Railway Company (Representative Director and President: Kazuaki Hasegawa, hereinafter "JR West") and Osaka Gas Co., Ltd. (Representative Director and President: Masataka Fujiwara, hereinafter "Osaka Gas") have been jointly developing a strong wind prediction system since 2019 and have been testing a trial system along the JR West Kosei Line since 2022.[1] Given the favorable test results, the system will begin implementation in February 2025. This is expected to reduce unnecessary detours for the Thunderbird Limited Express, thereby improving the stability of the Hokuriku Shinkansen Tsurugi trains, and extend the operating area of local trains on the Kosei Line.

JR West and Osaka Gas will contribute to the improvement of railway safety and convenience by utilizing the strong wind prediction system created by combining their respective strengths.

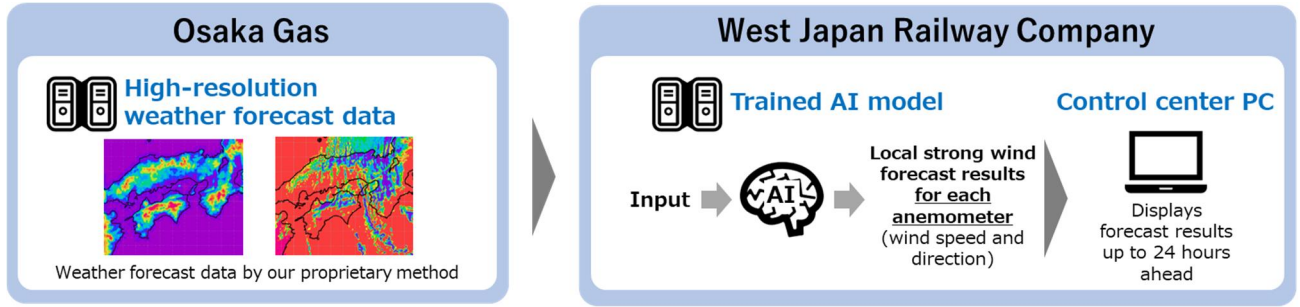1. Background to the introduction of the strong wind prediction system

When JR West anticipates prolonged strong winds, it will suspend services in advance to prevent sudden service suspensions and train stops between stations. Since the Kosei Line runs through an area prone to strong winds, it will operate the Thunderbird Limited Express trains via the Biwako Line and suspend local train services based on weather forecasts.

To improve the safety of train operations even further and ensure alternative transportation when services are suspended, the two companies have decided to jointly develop a system that can accurately predict strong winds along the Kosei Line by combining JR West's data science with Osaka Gas's weather forecasting technology.

2. Overview of the strong wind prediction system

(1) Prediction area	• Area between Otsukyo Station and Omi-Shiotsu Station on the JR West Kosei Line
(2) Prediction targets	• Wind speed and direction at the anemometers (14 locations) installed in the prediction area
(3) System overview	• The results of high-resolution weather forecasting conducted by Osaka Gas are analyzed by the AI model developed by JR West to predict the wind speed and direction up to 24 hours ahead.

■ System configuration conceptual diagram

*1: Osaka Gas and West Japan Railway Company Collaborate on Weather Forecasting and Data Science. A High-Precision Strong Wind Prediction System Was Introduced on the Kosei Line on a Trial Basis (June 2022):

https://www.osakagas.co.jp/en/whatsnew/__icsFiles/afieldfile/2022/06/23/220615.pdf