

## **Busan Port's Smart Piezoelectric System for Port Gates**

Utilising the ports' characteristics to produce green energy

Spearheading moves around the globe to establish eco-friendly and self-sufficient goals for energy generation, South Korea aims to cut its emission of greenhouse gases by 40% of its 2018 levels by the year 2030.

As part of this goal, South Korea is committed to ensuring that its ports are operating at optimal, eco-friendly efficiency, despite the increase in electricity-based ports. To do this, Busan Port is optimising for its unique characteristics as a port to introduce piezoelectric energy generation, utilizing the vibrations and pressure generated during the passage of cargo trucks. Piezoelectric energy has many benefits compared to solar and other renewable and non-renewable sources, including low installation costs and minimal space requirements.

The installation of piezoelectric energy generation at Busan Port spans a two-year roadmap from November 2021 to October 2023. Using Uam Pier as a test-bed, modules will be thoroughly tested, and expected energy generation estimated. Following these tests, piezoelectric energy generation modules will be installed at all 47 gates of the six piers of Busan New Port.

This initiative is expected to result in the generation of 2,115MW in electricity per year; enough to power 705 households during the same period. It will also reduce CO<sub>2</sub> emissions by approximately 936.522 tons, which is equivalent to planting more than 149,400 pine trees.

Busan Port are proud to be developing market-leading strategies for the generation of green energy to power its national ports.