

Building a System to Evaluate the Quality of Carbon Credits Using Generative AI

October 4, 2024
Osaka Gas Co., Ltd.

Osaka Gas Co., Ltd. (Representative Director and President: Masataka Fujiwara) has developed the world's first¹ system for evaluating the quality of carbon credits using generative AI.

Carbon credits refer to certified amounts of avoidance or removal of carbon dioxide (CO₂) and other greenhouse gases (GHGs) that can be traded between countries and companies. Carbon credits are primarily classified into the avoidance type, which are created by upgrading existing facilities to more efficient facilities, and the removal type, which are created by fixing CO₂ in plants or soil by removing it from the atmosphere, such as through afforestation and the application of biochar to farmland.

In recent years, as a means of achieving their carbon neutrality plans, companies and other entities have increasingly been making efforts to reduce GHG emissions and then offsetting any impossible-to-reduce GHG emissions with carbon credits. As a result, it is estimated that the world will need credits worth up to ¥100 trillion² by 2030, and the development of credits is expected to continue accelerating in the future.

At the same time, properly assessing the quality of carbon credits is extremely important in avoiding the risks of greenwashing and price fluctuations and can also be an advantage from a business perspective.

Osaka Gas has built a system that uses generative AI to evaluate the quality of carbon credits. The scope of credits in which this system can be applied will expand in the future.

To evaluate the quality of carbon credits, this system uses generative AI and analyzes plans for carbon credit projects, assessing the consistency of the standards established at the time of actual credit certification with the standards set by initiatives and rating companies. The system's accuracy has proven to be high when compared with the results of past evaluations conducted by rating companies and other organizations. In addition, full use of AI enables a huge number of carbon credit projects to be comprehensively evaluated. Accordingly, the system may make it possible in the future to comparatively evaluate the quality of different carbon credit creation projects.

This makes it possible to dramatically reduce the time it takes to conduct an initial evaluation, which previously took a couple of months when outsourced to a third party, to just a few tens of seconds.

Going forward, Osaka Gas plans to continue further system development, including improving the evaluation accuracy, and also to proceed with joint development with related companies to further improve the system and expand its areas of application. Through these efforts, the company will be able to deliver high-quality carbon credits to our customers. Osaka Gas also hopes to pursue all possibilities in collaboration with its partners, such as licensing this system and using it within a credit trading platform, in order to contribute to avoiding and minimizing greenwashing throughout society.

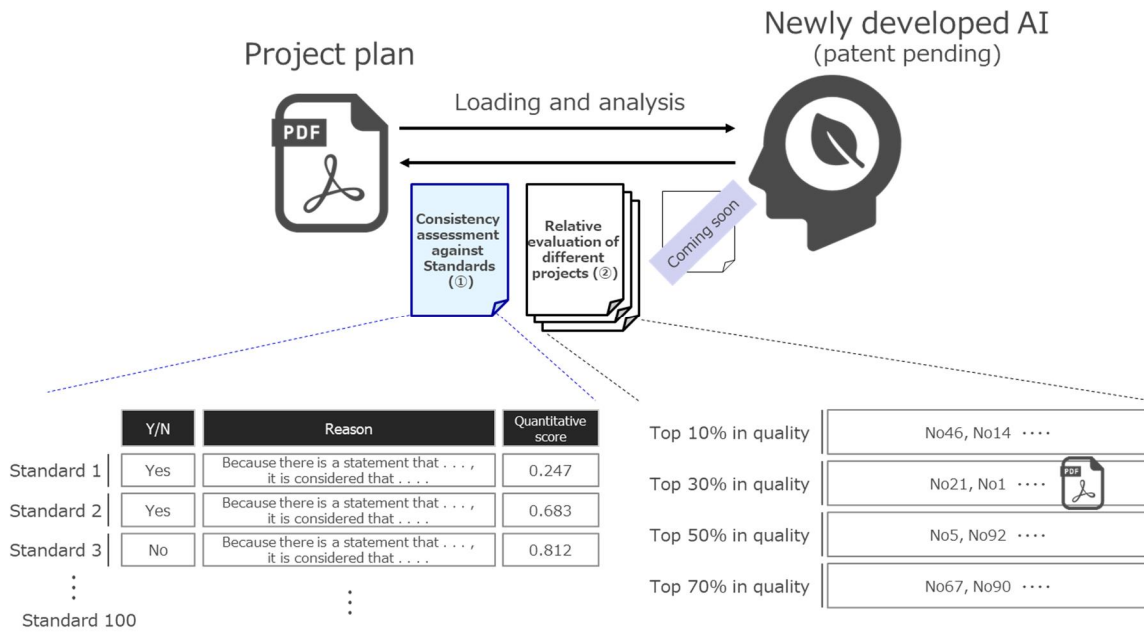
The Daigas Group, under the Carbon Neutral Vision announced in January 2021 and Energy Transition 2030 released in March 2023, remains committed to developing technologies and services that contribute to a carbon-free society and solving social issues, including climate change, in order to become a corporate group that helps customers both on the livelihood and business fronts for their “further evolution.”

Notes

1. According to our research
2. Carbon Credit Global Market Report 2024 (Global Information, Inc.)

1. Newly Developed Carbon Credit Quality Evaluation System Using Generative AI

- Newly developed AI is used to analyze carbon credit project plans.
- Evaluation of the quality of carbon credits by assessing their consistency with over 100 standards (①)
- AI's capability to comprehensively evaluate a huge number of projects, with the potential to conduct a relative evaluation of the quality of different projects in the future (②)



2. How this system could be used

- The process of carbon credit issuance is as follows: Certification by a certification body based on a credit project plan → Project development → Credit issuance and rating by a rating agency → Trading.
- By using this system to evaluate many projects in advance before credit development begins, it will be possible to select quality projects and make quick decisions on investments and credit purchases.
- By using this system to evaluate credit quality before credit trading, quality risks such as greenwashing can be easily identified.

