Race to Decarbonise: An Enterprise Effort in meeting Net Zero target.

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Abstract

Journey to achieve Net Zero is inevitable. With Paris Agreement, which plan to limit the rise of global average temperature to below 2degC and strive to achieve 1.5degC by combating climate change, which came in force on November 2016, countries started to declare their pledge on Net Zero ambition. PETRONAS has also taken progressive steps by declaring Net Zero Carbon Emission by 2050 aspiration.

The journey started with immediate short-term target of capping emission to 49.5mtCO2e for Malaysia Operations by 2024. To achieve the target, a unit called Enterprise Decarbonization is established to accelerate decarbonization solutions & projects across PETRONAS encompassing Upstream, Gas and Downstream value chain. The unit has deployed a unique method in identifying, filtering, and selecting eligible projects and programs to be deploy in meeting the target within the required timeline.

It started with identification of emission sources across the enterprise through evaluation of the actual & forecasted emission profiles for the past 5 years and next 5 years. Possible solutions were then identified and mapped against identified solution levers. These levers are Zero Flaring & Venting, Energy Efficiency, Carbon Capture and Storage & Electrification Improvement. These 4 levers were identified as part of the PETRONAS Decarbonisation pathway to meet NZCE2050.

The list of projects were then evaluated and scored using an indexing tool that scored the programs & projects based on four metrics. Which are: Cost, Schedule, Carbon Abatement & Project Complexity. The projects were then ranked based on the index, before being prioritized based on their impact that will contribute the carbon reduction target within the stipulated period.

Additionally, performing the projects at enterprise level allows the project to be executed through a 3-pronged strategy. The strategies are as follows:

- Front loading the activities by performing certain program earlier than its initial plan. This includes work process green lane activity proposed by the team.
- Bundling solutions across enterprise for scale and pace. One of the examples is installation of an automated near real time enterprise-wide key energy metrics used to improve energy efficiency and reduce associated GHG emissions.
- Advocating open innovation through a program called Race2Decarbonise. It was an event that gathered decarbonization ideas from all parts of the world. The event managed to gather more than 500 submissions.
from 25 countries and shortlisted it to 29 under two categories, proven and novel solution. 3 winners from each category are declared, and implementation of the program is currently ongoing.

Through the execution of the projects in a centralized and orchestrated manner, Enterprise Decarbonisation has been able to realised some early successes. It has managed to bring PETRONAS on the right path in meeting its short-term target with a world class abatement cost index and improved cycle of efficiency of 35% utilizing green lane process.

In summary Enterprise Decarbonisation successfully contributed to accelerate PETRONASs’ short-term GHG target via it’s novel approach of identifying, prioritizing & accelerating programs to ensure quick deployment at scale and pace.

World Economic Forum, What is the Paris Agreement? Oct 2023  What is the Paris Agreement? Here's all you need to know | World Economic Forum (weforum.org)