

THE IMPACT ANALYSIS OF GHG REDUCTION INDICATORS ON CARBON EMISSIONS IN TRANSPORT SECTOR OF KOREA

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ABSTRACT

The international community declared a commitment to Net Zero through the Paris Agreement to address accelerating climate change. Countries worldwide agreed to participate by submitting and implementing Nationally Determined Contributions (NDC). South Korea also joined this declaration, aiming to achieve Net Zero by 2050. Achieving Net Zero requires the establishment of policies tailored to each country, along with regular assessments to ensure effective strategy implementation. The Greenhouse Gas Inventory and Research Center of Korea (GIR) has introduced 19 reduction indicators related to policies in the road transport sector and conducts assessments based on these indicators to evaluate greenhouse gas reduction efforts in the transport sector. However, the effectiveness of these assessments has not yet been verified. This study analyzed the relationship between the reduction indicators in the road transport sector and greenhouse gas emissions. The results indicated that only some indicators had a tangible impact on emissions, making it challenging to directly evaluate the implementation of the national reduction strategy based solely on the current indicators. Accordingly, we propose establishing a Measurable, Reportable, and Verifiable (MRV) system using diverse mobility and behavioral data. Such a system would enable policy stakeholders to accurately diagnose and monitor greenhouse gas reduction efforts, thereby enhancing policy effectiveness.

Keywords: Impact Analysis, Net Zero, Transport Sector, NDC(Nationally Determined Contribution), GST(Global Stocktake)

INTRODUCTION

To address accelerating climate change, the international community declared carbon neutrality through the Paris Agreement. To achieve the Paris Agreement's goal of mitigating global warming by "limiting the rise in average global temperature to below 2°C compared to pre-industrial levels by 2100," swift commitments to carbon neutrality have been made as part of the global climate crisis response. In line with this trend, South Korea joined the movement in October 2020 by pledging to achieve carbon neutrality by 2050. In addition, South Korea adjusted its 2030 Nationally Determined Contribution (NDC) target for greenhouse gas emissions in the transportation sector, raising the reduction rate from 26.3% (based on 2018 levels) to 37% by 2030.