

### **Abstract**

The increasingly urgent issue of climate change is driving a global demand for a transition to energy sources that are more environmental friendly, which is renewable energy. Countries, including those in ASEAN, are committed to increasing their share of renewable energy. But what exactly is the dynamic relationship between renewable energy consumption (REC) and economic growth in developing ASEAN countries? And what factors actually influence the adoption of renewable energy? This study addresses the literature gap by analyzing data from 2000-2022, using the Neoclassical Solow Growth Model framework and the PMG ARDL method as well as adjusted panel regression. The findings of this study indicate the absence of a significant relationship between REC and economic growth, both in the short and long run. The result from Granger causality tests also confirm the neutral hypothesis, highlighting that REC do not cause economic growth, nor vice versa. Furthermore, the study found that population growth and CO<sub>2</sub> emissions are the main socioeconomic factors that impact negatively renewable energy consumption. These results underscore the persistent challenges in renewable energy development in the region, including high initial investment and reliance on conventional energy. Nonetheless, lower operating costs, minimal environmental impacts, as well as financial innovations such as green bonds, confirm that renewable energy development remains crucial for long-term gains.

***Keyword:* Climate change, Energy transition, Renewable energy, Economic growth, Determinant factors**