

Energy transition metals in the Dutch economy

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Extended Abstract

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Abstract Summary

The green transition requires phasing out fossil-based energy technologies and scaling up renewable and other low carbon options. This shift is expected to increase global demand for Energy Transition Metals (ETM), key materials needed for large-scale deployment of zero-emission technologies. Rising ETM prices may significantly affect user economies like the Netherlands, which depend on these commodities but lack domestic production. Using a Computable General Equilibrium model, we assess the impact of higher ETM prices—driven by the global energy transition up to 2040—for four key metals: cobalt, copper, lithium, and nickel. We find that higher ETM prices reduce productivity, leading to GDP per capita being roughly 2% lower by 2040, alongside negative welfare effects arising from higher inflation and unemployment. Households and industries substantially cut their use of ETM-containing goods, lowering domestic demand. At the sectoral level, the metallurgical industry experiences the largest output losses and cost increases.