

## Our View: Wood Mackenzie's Macroeconomic Nonsense

Philip Verleger

Two projections of the economic effects of reaching net-zero by 2050 came out last week. The first is a piece of junk prepared by Wood Mackenzie, the well-known consultants to the petroleum industry.<sup>1</sup> The second is a thoughtful, careful, detailed analysis done by McKinsey.<sup>2</sup>

The Wood Mackenzie report was summarized in *The National*, a UAE publication. The author quotes Peter Martin, Wood Mackenzie's head of economics:

"While preventing more extreme warming is likely to have a positive economic impact over the next 30 years, the action required to deliver it could have an off-setting negative effect. The cumulative loss of \$75tn over 2022 to 2050, while material, amounts to just 2.1 per cent of total economic output over the period."<sup>3</sup>

Wood Mackenzie's "head of economics" (who seems to have no advanced economics training) explained that the impacts would be uneven. Some areas, such as China, would suffer while others would not be much affected.

The report's methodology description suggests the firm avoids serious economic re-search:

Our top-down approach is based on a review of existing economic studies. Collating third-party results on climate damage impacts, we estimate that avoiding a higher temperature increase could boost global GDP, on aggregate, by 1.6% in 2050. At the same time, however, the actions required to successfully mitigate global warming to 1.5 °C could knock 3.6% off GDP in 2050.<sup>4</sup>

In other words, Wood Mackenzie did no basic research of its own. The report focuses on the "resilience" to climate change of various countries. Nations were "scored" on this resilience and readers presented with a color-coded world map with no details on how the impacts of actions to avoid climate change were measured. Instead, readers must "trust" the authors. The report also presents a chart showing the percentage change in GDP for numerous countries based on national carbon intensity per capita in 2018. Middle East nations are the largest losers in GDP terms. Switzerland, France, Japan, and the EU are viewed as "winners."

The consulting firm's authors then write that hydrocarbon-exporting and carbon-intensive economies will suffer the largest loss: "The Middle East has some of the lowest-cost oil assets in the world and it is

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<sup>1</sup> Peter Martin and Yanting Zhou, "No Pain, No Gain: The Economic Consequences of Accelerating the Energy Transition," Wood Mackenzie, January 2022 [<https://tinyurl.com/2p9h6dc8>].

<sup>2</sup> McKinsey Sustainability, "The net-zero transition: What it would cost, what it could bring" January 2022 [<https://tinyurl.com/57rx3aez>].

<sup>3</sup> Sarmad Khan, "Energy transition may shave \$75tn off global economy by 2050, Wood Mackenzie says," *The National*, January 20, 2022 [<https://tinyurl.com/jjnetxem>].

<sup>4</sup> Martin and Zhou, p. 5.

likely to hold on to a sizeable share of the remaining oil production in an accelerated transition.”<sup>5</sup> Less-developed and low-income economies will also experience “disproportionate damage.”

The Wood Mackenzie “report” should be seen as a political document, not serious re-search and analysis. It was prepared, it seems, for use by those who want to slow efforts to reach net zero.

McKinsey’s “The net-zero transition: What it would cost, what it could bring” report is, in contrast, a serious effort by a sizeable research team and well-known outsiders such as Mark Carney, the UN Special Envoy on Climate Action and Finance. The document is two hundred twenty-four pages, making it impossible to encapsulate. As the firm explains in its preface, “the report is a ‘first order’ analysis.” The authors add,

It is not clear whether a scenario to limit warming to 1.5° is achievable.

One cannot address technological breakthroughs or the scaleup of capacity.

No effort was made to identify the way in which the transition was paid for although the costs were identified.

The McKinsey analysis is worth a full careful review as the authors did their best to identify the uncertainties and risks associated with moving to net zero. Here we recap only the economic comments contained in the executive summary:

Six characteristics of the net-zero transition emerge from our scenario-based analysis. First, the transition would be universal. Indeed, net-zero emissions can be achieved if and only if all energy and land-use systems that contribute to emissions are decarbonized, as these contributions are significant in all cases. All economic sectors and all countries would need to participate.

Second, the scale of the required economic transformation would be significant. In particular, we estimate that the cumulative capital spending on physical assets for the net-zero transition between 2021 and 2050 would be about \$275 trillion. This means that spending would need to rise from about \$5.7 trillion today to an annual average of \$9.2 trillion through 2050, an increase of \$3.5 trillion. Accounting for expected increases in spending, as incomes and populations grow, as well as for currently legislated transition policies, the required increase in spending would be lower, but still about \$1 trillion.

Third, these effects would be front-loaded: spending would need to rise to almost 9 percent of GDP between 2026 and 2030 from about 7 percent today before falling. Likewise, we estimate that the delivered cost of electricity (across generation, transmission, distribution, and storage, and including operating costs, capital costs, and depreciation of existing and new assets) would rise by about 25 percent between 2020 and 2040 in the scenario modeled here before falling from that peak, although this would vary across regions.

Fourth, the transition would be felt unevenly among sectors, geographies, and communities, resulting in greater challenges for some constituencies than others.

Fifth, the transition is laden with short-term risks, even as the transition will help manage long-term physical risks. If poorly managed, it could increase energy prices, with implications for energy access and affordability, especially for lower-income households and regions. It would

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<sup>5</sup> Martin and Zhou, p. 11.

also have knock-on effects on the economy more broadly. If not well managed, there is a risk that the transition it-self would be derailed.

Sixth is that, despite the challenges with making economic and societal adjustments, the transition would give rise to growth opportunities across sectors and geographies—and, critically, it would help avoid the buildup of physical risks.

This research aims to highlight the nature and magnitude of the economic transformation that a net-zero transition would require. While the challenges ahead are large, the findings of this research should be seen for what they are: a call for more thoughtful, decisive, and urgent action to secure a more orderly transition to net-zero emissions by 2050.

The McKinsey effort reminds us that there are no facts about the future. This means efforts to estimate the impacts will be complex and uncertain, particularly given the scenario cycle is twenty-eight years. One need only think back twenty-eight years to 1994. Oil prices were in the teens then, few worried about global warming, and Eastman Kodak still dominated the home image business. The first widely used web platforms were only introduced in late 1993. Microsoft's Internet Explorer® was also introduced in 1993. And the iPhone would not come into being for another thirteen years.

The message, then, is that we do not know if the net-zero goal can be achieved without serious economic losses. We also do not know whether the transition can be done without social revolution. One can only look to ideas, concepts, and technologies that look promising, taking the financial risks like those taken by the developers of the internet and other technologies unknown before 1994, and respond to the signals received from Mother Nature over time.

Reports such as Wood Mackenzie's "No Pain, No Gain" are not helpful. Indeed, they only will slow and perhaps stop progress.