

I speak to you today as a researcher who has been studying energy transitions and its impact on poverty and inequality around the world. I have a deep concern that there is a significant disconnect between our current direction and the future pathways that we scientists envision that can stabilize climate change, achieve many of the SDGs and move us to a more equitable world. My goal today is to provide some insights about this vision, and how we need to change our approach to achieve the SDGs.

Current trends:

The recent Sixth Assessment report of the IPCC tells us that in the decade before Covid emissions have been higher than ever before. Despite Covid, emissions are bouncing right back to pre-pandemic levels. If we do not alter our trajectory, we are on track to far exceed the temperature threshold we agreed to in the Paris Agreement for Climate Change. With regards to poverty eradication, though income poverty has reduced significantly, when we look at people's living standards, progress is much slower, including access to clean cooking, water, sanitation adequate shelter and to motorized transport. This is because most of our growth in the last few decades has been increasing affluence more than has been improving basic wellbeing.

The good news is that recent scientific research suggests that both these goals – climate change mitigation and poverty eradication – are compatible. That is, the energy growth needed to provide decent living standards to all today is a fraction of global energy demand in just one year. Half of the energy needed is to build adequate transport infrastructure and safe housing. (urbanization, most energy use, focus on emerging cities). Policies focused on improving these basic services, and health and education, would reduce our emissions growth. Industrialized economies can reduce their current energy demand by more than half, and still have enough energy to provide everyone with decent living standards.

In low- and middle-income countries, the most impactful areas of sustainable climate-friendly growth are increasing public transit instead of car-dependence, and public housing using sustainable materials rather than building luxury apartments. We can improve nutrition and food security and reduce environmental impacts of food production by eating a diverse diet with multiple grains instead of just rice. These three areas – transit, housing, and food diversity, are the most important areas for low-carbon poverty eradication pathways.

In industrialized countries, the most significant finding of the IPCC report is the high potential for reducing emissions from demand-side changes, that is changing our patterns of consumption, because they reduce pollution, reduce our energy bills, and improve our quality of life. Ukraine war is a crisis, but a wake up call for energy security. The least risky way to reduce foreign dependence is to reduce energy demand, by improve building conditions, encourage conservation, and subsidizing efficient appliances like heat pumps. For example, according to the International Energy Agency, reducing thermostat settings in European homes by just one degree can avoid one month of Russian gas imports. Lower meat consumption, telecommuting for work, using public transit, building smaller cars with different materials, using electronic products longer, re-using and sharing old products, building smaller homes, all can improve wellbeing while also reducing emissions growth. Policy is essential to guide these demand-side changes. Policies can guide new building codes, invest in public transit, subsidize healthy foods. During the oil crises of the 70s European governments did issue such decrees. Public

Conclusion: The SDGs are, at their essence, about improving people's well-being. We need to broaden our national progress indicators beyond economic growth to incorporate well-being more directly. Our current research on futures and scenarios focuses too much on aggregate outcomes. We need our research tools to track the distribution of income and basic decent living standards. We now have the analytic capability to link well-being and environmental impacts at the individual level through people's living standards. We need to understand better the distribution of SDG gaps within countries. We need to ask ourselves why basic living standards are growing so much slower than affluence.

If we grow more equitably by growing the basic services needed by the poor, we will improve well-being while also reducing the energy demand growth in our economies. If we focus on public health, shared resources, if the affluent consume and waste less, we can reduce the challenges to meet the SDGs.