

# ANDREW BROWN

Junior Environmental Policy Analyst at the OECD

**Lucia Sinapi-Thomas, Executive Director of Capgemini**

I will start with you Andrew, you are a researcher at the OECD, in particular you have been publishing a lot of information on materials and their correlation to environmental impacts and climate change. Could you tell us more about that with a particular focus on waste?

**Andrew Brown**

Yes, thank you very much. First, I would like to say thank you to Song-Nim and the organisers of the World Policy Conference, it is an absolute honour to be here today. At the OECD we are taking a look at this interaction between the environment and economic systems. At the core of this interaction is this paradox that when we look at our economic systems we begin to see economies of scale, that with each additional input we see an improvement in our ability to produce. However, when we consider our natural resource use we see the exact opposite, diminishing marginal returns. The question becomes how these two relationships work with one another and how can we find a new economic system to break free from this paradox?

At the OECD we have done a number of studies, in particular we have done work on global materials outlook, looking at macroeconomic models and seeing what we anticipate happening in 2060 around materials use. We notice a doubling of total weight of material used in 2060 compared to 2011. We notice that materials will constitute roughly one-fifth of greenhouse gas emissions in 2060, this is when we account for demographic change and structural changes to the economy that we anticipate. This is not going to be uniform across economic sectors, we anticipate construction being particularly well-impacted in terms of material use, which we will hear more about later in terms of concrete. We also notice the increase in fossil fuel use.

This is a question around material use that has been around and preoccupied economists for a long time. For example, 200 years ago it was Turgot from France, who noticed this diminishing marginal return when applied to agriculture. While, 100 years ago there was an analyst at the United States Geological Survey who mentioned that we might be facing peak oil within the next three years. Lucia, you mentioned the Club of Rome 50 years ago, and I think in the last 50 years there has been a bit more nuance around resource use. The fear has sort of developed away from the exhaustion of resources into more looking into the impacts of our use of natural resources. When we think about these impacts, one way of thinking of this can be the planetary boundaries of the Stockholm Resilience Institute, noticing biodiversity and biochemical flows, and these areas have already gone beyond what we would expect from our economic system. We also look at what is next, which is probably land use and climate change. These are big problems facing our economic system and how we use our natural resources. We think about



what the possible solutions could be, and one area that the OECD is very interested in is circular economy. We break circular economy down into three particular parts. We think about efficiency, how we can use natural resources more efficiently and get more economic productivity out of a certain amount of resource use. How we can slow our resource use, meaning how we can use and keep products at the highest value possible for the longest period of time possible. Then we also want to close our economic systems, address the leakage of our products into the environment and the impacts that they have.

We can talk about applying this to one particular material used, which is plastics. Essentially we have had a similar project recently around global materials outlook with plastics use globally. When we take a look at plastics, these are a ubiquitous material in modern economies. We see this more so in the OECD countries, but we anticipate growth in the use per capita in the non-OECD countries between now and 2060. We have estimated in 2019 that the economic system produced 460 million tons of plastics, of that 350 million tons roughly became waste in 2019. When we consider this growth we also notice a growth in what is leaking to the environment, so in 2019 we estimated that roughly 22 million tons of plastics leaked into the environment, and when you compare that with what was recycled we estimated that 9% of total plastics waste was recycled in 2019. This is a major problem facing us and just last week we had the first meeting of the inter governmental negotiating committee taking a look at a binding commitment regarding plastics, which was agreed up on through the United Nations Environment Assembly.

This is my first intervention to describe the issues and I look forward to describing policy solutions in a second intervention.

**Lucia Sinapi-Thomas**

Thank you, Andrew.