Rethinking carbon neutrality goal for countering climate change

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Today (August 14, 2021), I read a news article about how blue hydrogen can be ineffective in curbing climate change [1]. The article reported findings from the study of Howarth and Jacobson [2].

In their study, Howarth and Jacobson [2] suggested that blue hydrogen might result in more greenhouse gases emitted to the environment than fossil fuels do.

“[...] the greenhouse gas footprint of blue hydrogen is more than 20% greater than burning natural gas or coal for heat and some 60% greater than burning diesel oil for heat, again with our default assumptions.”

Indeed, there is really no perfect solution. Even Kitakyushu city, which has implemented eco-friendly policies for more than 50 years, still struggles with the trilemma of sustainable industrial growth [3]. However, defining a more precise ultimate goal would help avoid wasting resources and countering climate change more effectively [4].

If reducing the carbon dioxide emissions to zero causes even more, greenhouse gas emissions, and in turn increasing the size and speed of climate change, it should be better to rethink the carbon neutrality goal. Carbon dioxide used to be considered the main

warming agent that drove climate change. However, methane has been more recently found to be more powerful than carbon dioxide and can cause 86-time more warming than the effect of carbon dioxide when compared mass-to-mass [5]. Yet, we are still not conclusive whether there are any other warming agents as powerful as or even more powerful than carbon dioxide or methane.

Recently, Vuong [6] proposes “the semiconducting principle”, a new way to calculate the New Net Profits (NNP) among the business sector to heal nature and improve sustainability conditions:

$$NNP = NMP + NEV$$

Where the New Net Profits is the sum of the normal Net Monetary Profits (NMP) and the new notion of Net Environmental Values (NEV). The NEV can be exchanged for NMP, but not vice versa.

In my opinion, inspired by this principle, two ultimate goals must be set for countering climate change. Since the environmental degradation is happening (or the NEV is negative), the first ultimate goal is to remove the negativity of NEV and make it to zero by neutralizing all possible greenhouse gas emissions, not only carbon or methane. When the first goal is accomplished, improving the NEV will become the next ultimate goal. Here, the NEV growth has to be considered with equivalent priority as economic growth, or even more in certain circumstances.

In short, the first ultimate goal is to eliminate the negative anthropogenic impacts (or human-made eco-deficits) on nature, while the second ultimate goal is to heal the environment or increase the human-made eco-surplus. One of the first steps is to change our mindset by integrating the environmental-healing core cultural value [6].

These goals might be deemed challenging or even impossible. But at least we have goals for navigation. Just like centuries ago, we dreamed of space, and now it almost comes true [7].

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