Agenda Item 4. Gallifrey Foundation

Thank you, Mr. Chairman. I represent the Gallifrey Foundation, based in Switzerland.

We would like to highlight an important topic that has barely been addressed this week: the role of the ocean in mitigating climate disruption, and more specifically the sea surface microlayer and plastic pollution.

The sea surface microlayer acts as a crucial and finely tuned interface between the atmosphere and ocean. It’s like a membrane connecting and controlling important exchanges, such as oxygen and CO₂ between the ocean and the atmosphere, which are essential for life.

Dumping millions of tonnes of plastic and chemical waste in the ocean, along with 80% of the world’s untreated sewage, combine into a toxic soup with negative effects on both ocean and climate.

This sea surface layer is maintained by marine plankton organisms essential to oxygen and CO₂ balance.

Plastic particles along with this sewage and other pollutants act as hosts and feed bacteria accelerating their growth and upsetting the balance between oxygen and CO₂ producers and consumers.

Bacteria overwhelm phytoplankton, resulting in increasing CO₂ production and less oxygen, limiting the ocean’s capacity to absorb more CO₂. This fundamentally changes ocean, atmosphere, and key climate processes.

- The exponentially increase in microplastics contribute to the negative impacts of ocean/atmosphere interface. The oxygen from the ocean into the atmosphere might slow down, leading to a starving ocean, less oxygen for other marine wildlife, and less oxygen and water vapour in the atmosphere, affecting climate and weather patterns.
- Our ocean is the prime sink of CO₂ and has been absorbing 90% of our human generated heat from GHG emissions equivalent to the energy of seven Hiroshima bombs exploding in the water per second. The inability of the ocean to absorb even more excess of CO₂ might slow down.
- If the ocean can no longer absorb this CO₂, the Earth could rapidly face unimaginable and drastic climate change, unable to maintain our average surface temperature at 15 degrees centigrade and transforming to 50 degrees centigrade.

The Global Plastics Treaty has a role in climate mitigation; it must urgently address upstream solutions to stop plastics entering the ocean at every point possible. It is essential that we protect our climate by dramatically reducing our plastic production.

Thank you for your attention.