HOW ECODESIGN METHODOLOGIES CAN BE LEVERAGED TO REDUCE THE CARBON FOOTPRINT THROUGHOUT A PRODUCT LIFECYCLE

Jonathan Molinari, GSK, USA
jonathan.c.molinari@gsk.com
Alexis Parrillo, Scientific Investigator within Process Development, GSK
Alexander Adams, Process Engineer, GSK
Daniel D'Aquila, Senior Director of Manufacturing Operations, GSK
Phillip Smith, Director of Process Technology, GSK

During the process development stage and through the lifecycle of a biopharmaceutical product, there is currently little focus on exploring sustainable options that can be implemented that meet required process specifications. Increasing scientific evidence shows that changes in the climate and the natural world are impacting human health. Given the scale of this challenge and the impact on health, GSK is setting ambitious goals to reduce the environmental impact of our products and packaging by the end of 2030. One of the more advanced tools that are being employed toward this goal is the use of Eco-Design to apply principles around use of technology and the application of management and operational practices. This tool allows analysis of single-use technology and techniques/tools to apply Eco-Design organizationally. GSK has successfully developed a Product Footprint Calculator Tool modeled around the Eco-Design principles to benchmark and quantify impact on climate change such as carbon footprint for our biological assets. Development of these models is driven around commercial manufacturing processes for assets that are currently in the clinical phase, which will enable GSK to propose more sustainable options to be used throughout the product lifecycle. Continuing to use these techniques and engaging in dialogue to build a culture with the goal to embed product sustainability requirements within process development workstreams will allow pharmaceutical companies to identify points throughout a product's lifecycle where sustainable options can be implemented to reduce overall environmental impact of biologics.