

## **Innovative Biocircular Film**

Introduction to sustainable material technology

**TDK Electronics Components, S.A.U.** Aluminum & Film Capacitors Business Group • Product Marketing Málaga, Spain February 2024



## What is Sustainability?

Sustainability is the balance between the environment, equity, and economy. The most often quoted definition comes from the UN World Commission on Environment and Development: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."



#### Towards sustainable development through the circular economy

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### **Sustainability Goals**



Climate change is accelerating, and earth's natural resources are being depleted at a fast rate. We're faced with big global challenges and the only way to effectively solve resource and environmental problems is by moving away from a linear "take-make-dispose" economy towards a circular economy.

✓ Three main principles should be applied (3R): Reduce, Reuse and Recycle.



- ✓ Goals as waste and products life are extended, minimizing the waste sent to incineration or landfill and a more efficient production model increase compromise with sustainability over time.
- ✓ The circular economy is an integral part of the sustainability agenda and can contribute to several different Sustainable Development Goals (SDGs).



### **TDK Sustainability Policy in Alignment with SDGs**





**Sustainable Development Goals:** 17 goals and 169 targets approved by the United Nations General Assembly in 2015; to be achieved by all countries by 2030.

More information here: https://sdgs.un.org/goals

### **Sustainable Approaches**

Based on a report by the International Telecommunication Union, the electronic waste produced globally in 2014 was 44,4 metric tons and this value increase in 2019 until 53.6 million metric tons, of which only 17.4% was recycled. For 2030 the amount of electronic waste is expected to exceed 74.7 million metric tons, which opens new challenges for the materials and recycling industry. *(Covestro, An introduction to Circular Design Guidebook, 2022)* 



### **Bioplastics**

Bio-based plastics reduce the dependency on fossil fuels



#### **Recycled based plastics**

Recycling plastics to fight pollution, reduce waste, and reduce energy consumption



### **Eco-Design**

Newly developed products design process must include circular economy aspects

### **Bioplastics**



### **Recycled Based Plastics**



# Recovering plastic waste as a raw material for new products

#### **Post-Consumer (PCR)**

- It means that the plastic has been used for its intended purpose by the customer.
- when it has completed its purpose, these plastics are recycled. It can be turned into recycled resin that will be used again in future products.

#### **Post-Industrial (PIR)**

- It is plastic that never made it to the consumer.
- Material generated as waste during the manufacturing process. It can be easier to collect and recycle.



### **Eco-Design**



Reduction of emissions and environmental

impact



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