

The Alphabet Soup of New Uses



Bioeconomy: An amorphous term. For NCGA purposes, the bio-economy is the direct (e.g., an ethanol plant) and indirect (e.g., some portion of the revenue of a restaurant near the ethanol plant) economic activity enabled by industrial biotechnology.

Biobased Materials: A material containing renewable carbon as analyzed by ASTM D6866. ASTM D6866 measures the amount of “new” carbon by measuring the amount of the Carbon-14 isotope present in samples. This process can determine the levels of fossil-derived and new carbon in samples.

Biodegradable: Materials that will be reduced into basic elements—usually water and carbon dioxide—by environmental processes mediated by microorganisms. Most carbon-based materials are biodegradable, but timing is an important consideration.

Biorenewable: A more general term than biobased, which includes not only those materials made with chemicals derived from renewable materials but also those directly incorporating renewable materials—for example, a paper cup or car door panel with fibers from plants as reinforcement.

Compostable: Materials that can be biodegraded relatively quickly. Some materials can be composted in residential situations; others need commercial composting facilities. All compostable things are biodegradable, but not all biodegradable things are compostable. For example, in the right conditions, a bone, will degrade over time, but the timing is such that it is not compostable.

Industrial Compostable: Materials that can be composted but require special conditions—usually elevated temperatures—to completely degrade.

Bioplastic: A plastic made with renewable carbon. This may be a uniquely bioderived material such as furan dicarboxylic acid or 1,3-Propanediol (FDCA) or biobased substitutes for existing petroleum-derived plastics such as polyethylene.

Biopreferred®: A USDA program that encourages government agencies to purchase biobased materials when they are equivalent and priced similarly to petroleum-based products. Very important program to create a market for bioderived products.

Industrial Biotech: Biotechnology focused on new industrial products and processes. Products are diverse and include fuels, industrial materials, chemicals and solvents, feed and food. This segment of biotech is different from health (e.g., pharmaceuticals), agricultural (e.g., GM plants) or environmental (e.g., bioremediation) biotechnology.

LCA (Life Cycle Analysis): A method to calculate the total environmental impact of a product from the production of the raw materials that the product contains to the disposal or recycle of the product.

