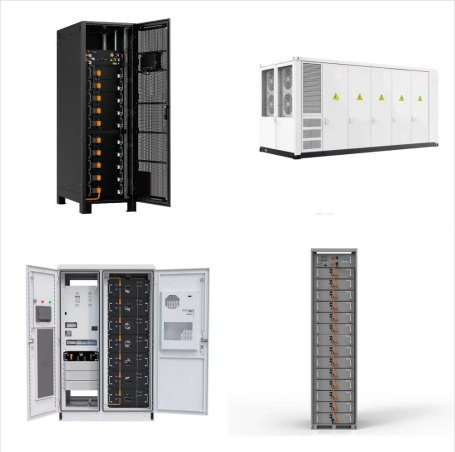
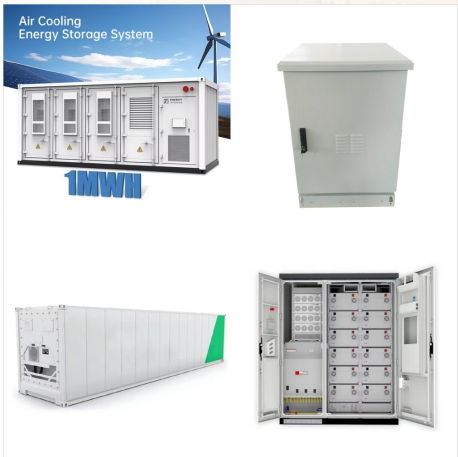
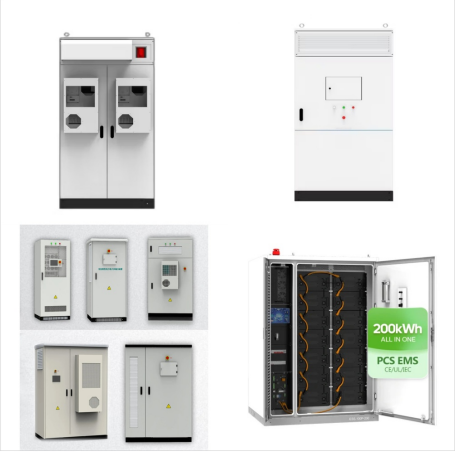


Glycolysis is a biochemical pathway in which glucose is consumed and ATP is produced. This pathway is an example of catabolism, in which larger molecules are broken down in the cell to make smaller ones. The opposite kind of pathway is anabolism, in which larger molecules are synthesized from smaller ones in the cell.

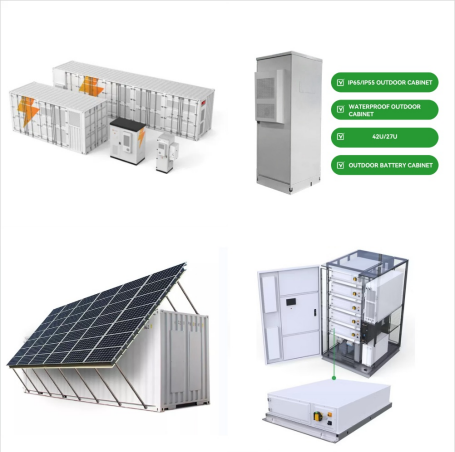


Chemical energy stored within organic molecules such as sugars and fats is transferred and transformed through a series of cellular chemical reactions into energy within molecules of ATP. Energy in ATP molecules is easily accessible to do work.

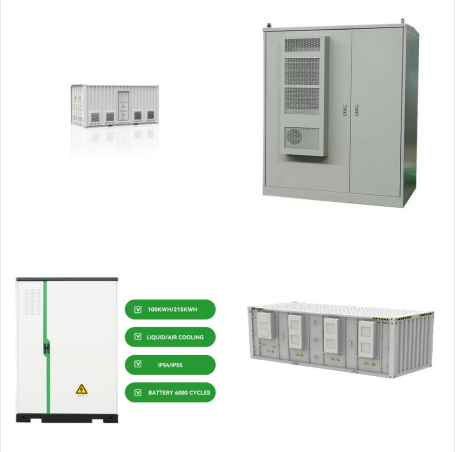


Living organisms use two major types of energy storage. Energy-rich molecules such as glycogen and triglycerides store energy in the form of covalent chemical bonds. Cells synthesize such molecules and store them for later release of the energy.

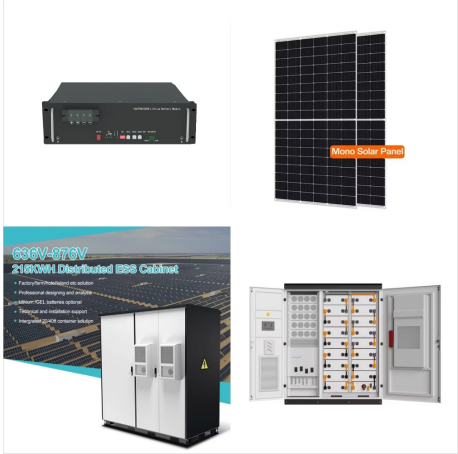
WHAT ARE ENERGY STORAGE MOLECULES



As we have just seen, cells require a constant supply of energy to generate and maintain the biological order that keeps them alive. This energy is derived from the chemical bond energy in food molecules, which thereby serve as fuel for cells.

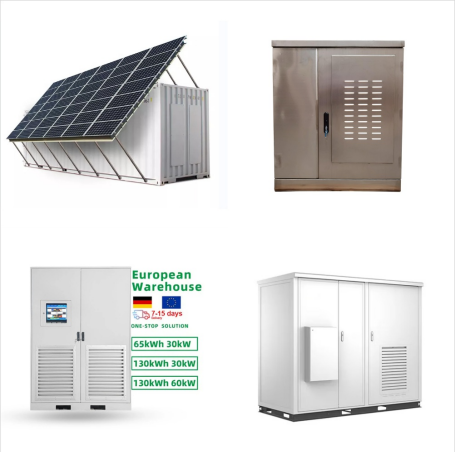


Carbohydrates are important cellular energy sources. They provide energy quickly through glycolysis and passing of intermediates to pathways, such as the citric acid cycle, and amino acid metabolism (indirectly). It is important, therefore, to understand how these important molecules are used and stored.



The two principal storage forms of energy within cells, polysaccharides and lipids, can also be broken down to produce ATP. Polysaccharides are broken down into free sugars, which are then metabolized as discussed in the previous section. Lipids, however, are an even more efficient energy storage molecule.

WHAT ARE ENERGY STORAGE MOLECULES



Adenosine triphosphate (ATP), energy-carrying molecule found in the cells of all living things. ATP captures chemical energy obtained from the breakdown of food molecules and releases it to fuel other cellular processes. Learn more about the structure and function of ATP in this article.