

In search of the origins of energy

The Energy, Education and Experience Centre (EEZ) in Aurich was built to promote technical and scientific orientation among children and adults, as well as to sensitise people in Germany for resource-saving and encourage them to take it up in their everyday activities. This provides important impulses on the road to a sustainable change in energy policy and shows the ecological potential of regenerative energy sources.

The unique experience of the EEZ exhibition is that it approaches the subject of energy playfully. What is energy? Where does it come from? And how can we use it? With a total of 7 themes from fossil fuels to solar and wind energy, visitors are invited to try out, discover and see things in this one-of-a-kind exhibition. Fascinating experiments and impressive models transform the topic of Energy into something everyone can experience in their own special way.

While one part of the exhibition deals with conveying basic knowledge about energy by digital means, and presents scientific aspects, the part on energy production offers a direct physical and individual experience. A playful approach imparts an understanding of energy expenditure and effects of energy.

One of five stations on the generation of energy is dedicated to electricity generation in a pumped-storage plant. For the construction of this model, two intermediate bulk containers (IBCs) from SCHÄFER Container Systems are used. These lightweight IBCs made of stainless steel, known as Cubes, with a volume of 1,000 litres, are normally used for the transport or storage of liquids or pastelike substances in the food, pharmaceuticals and oil industries or for paints and lacquers.

One Cube was placed on an 8-metre high tower, with the other positioned a little below it. Both these SCHÄFER Cubes are connected by pipes. If a surplus of energy is generated, this is then used to pump the water inside the tower out of the lower Cube (lower basin) in to the higher Cube (upper reservoir) by means of various rockers and pumps. Now the conditions are fulfilled for generating new energy in the pumped-storage plant model. The power plant has a unit consisting of turbines, a motor, a generator and a pump. Whenever new energy is required, the upper reservoir releases water that shoots through the water turbine (pelton turbine), driving the generator and thus producing energy. If there is a surplus of energy again, the water is pumped up into the upper reservoir once more to be used for producing electric power again later. This way, the energy is buffered in the water that is pumped upwards.

“The energy transition is supposed to be a response to climate change. Environmentally friendly energy production will be one of the most important and most debated global issues for years to come. The EEZ has set itself the goal of informing people about new ways of developing regenerative energy sources and ways of producing and using energy that are efficient and as sustainable as possible. They want to communicate this and encourage people to talk and think about it. We’re happy that we can make our own small contribution to this,” says Christof Ermert, Business Unit Sales Director for IBCs and special containers at SCHÄFER Container Systems.