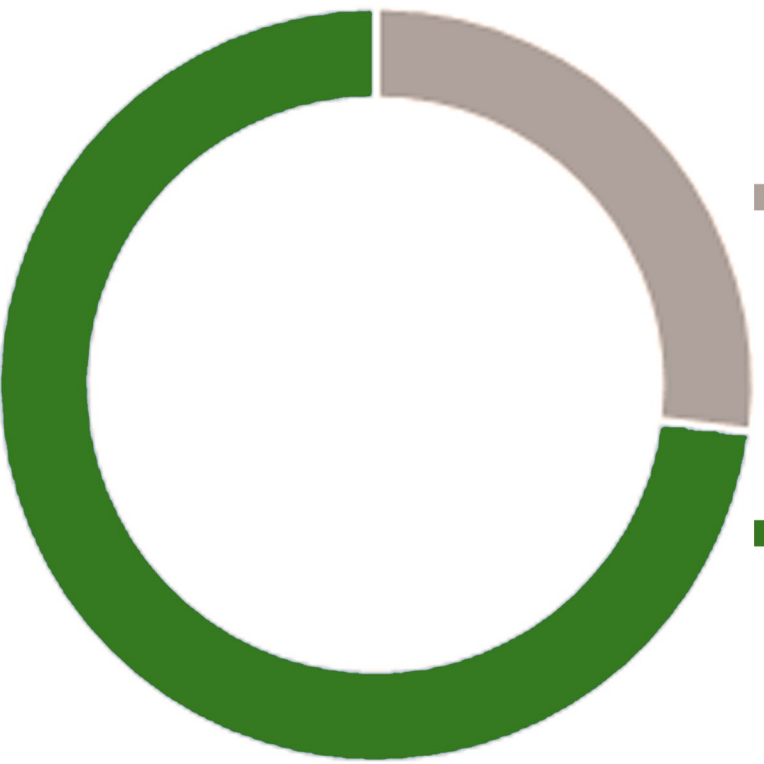
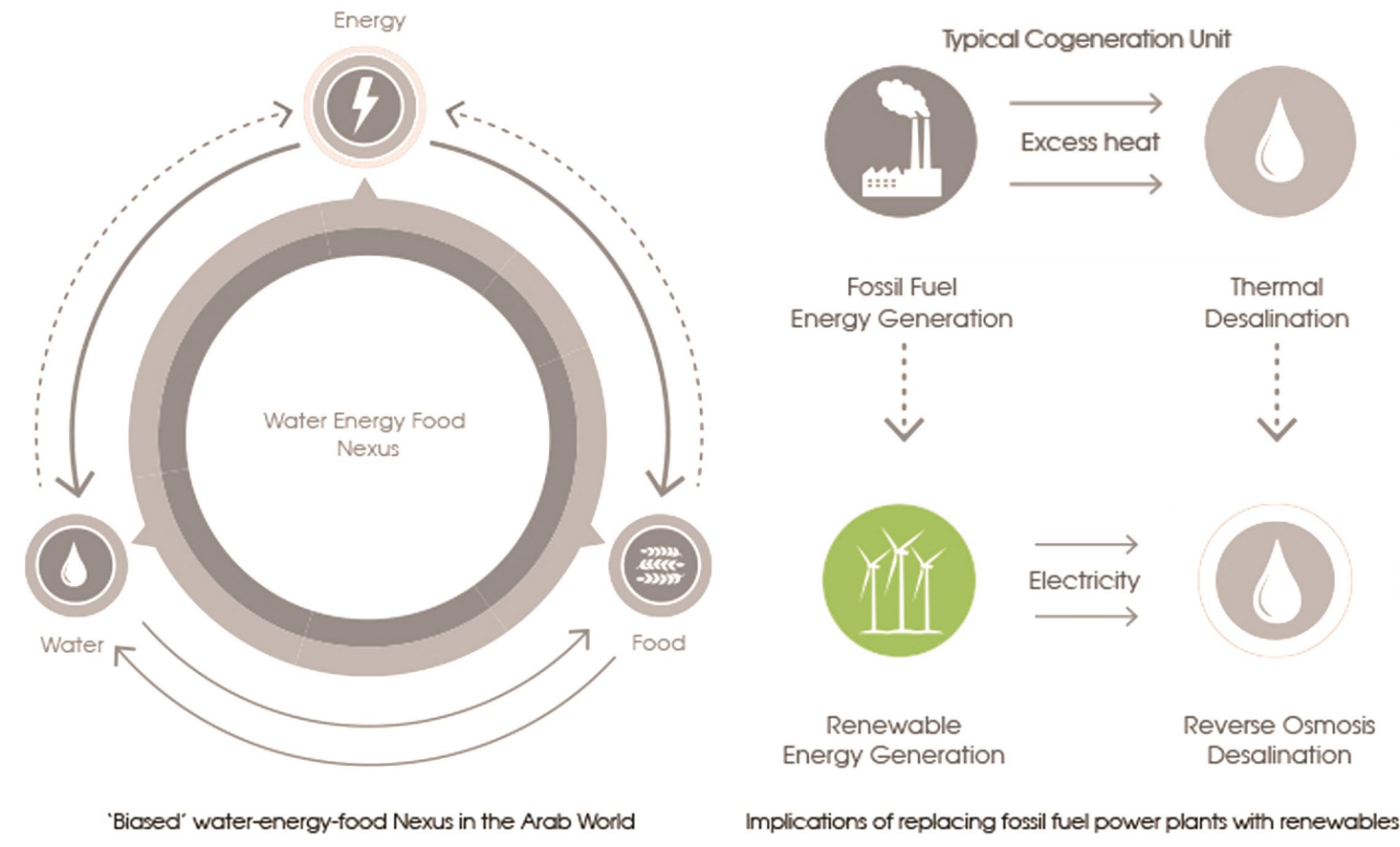


With rising energy consumption in the world, we have to make sure that energy security is guaranteed when conventional energy sources are depleted. Currently, the energy we consume is primarily from fossil fuel sources and the generation of energy releases greenhouse gases like CO2. The energy needs to be generated locally and from a sustainable source to deliver energy security. Currently, popular sustainable energy harvesters are windmills and photovoltaic panels. These systems can sustainably generate electricity, but they cannot take up CO2 to support the goal of net zero carbon future. Microalgae can mitigate CO2 and produce energy at the same time. On the other hand, the by-product of microalgae is clean water that holds immense value in the region like Masdar.

Through the design process of the landmark (cell factories), simple design and light-weight elements with efficient use of environmentally friendly materials were wanted. As a result, the foundation of landmark elements is winds oscillators that act as small wind turbines and a base for microalgae membrane. They are Bladeless technology consists of a cylinder fixed vertically with an elastic rod.

Eventually, these tow integrated technologies make the landmark CO2 emission minimal while generating nearly 2,000 MWh energy annually. The landmark (cell factories) could serve the Masdar net zero carbon goal effectively.



Bladeless Wind Oscillators
600 MWh

Mediator-Free Microbial Fuel Cells
1625 MWh

