

Abstract

The present invention relates to a process and an apparatus for utilizing fossil energy with low carbon emissions, which belongs to a technical field of clean energy and climate mitigation. The present invention is applicable for utilizing fossil, biomass and other carbon-containing fuels in coastal and marine areas to produce clean energy with low carbon emissions to atmosphere and low cost. The process comprises the main steps of carrying out the oxygen enriched combustion and using seawater to scrub the flue gas once to realize carbon capture, and the scrubbing water is recovered to a water quality in accordance with legal requirements and then is discharged into the ocean to realize carbon storage of ocean natural alkalinity, so that the resources of carbon sink and carbon pool in natural ocean are used to reduce greenhouse gases in the atmosphere in a safe and environment-friendly form.

Figure 2