

8.11 INTEGRATED GASIFICATION COMBINED–CYCLE (IGCC) PLANTS IGCC plants consist of three main sections: the 'gas island' for conversion of coal and refinery residues (such as heavy fuel oil, vacuum residues or petroleum coke) including gasification and downstream gas purification (removal of sulphur and heavy metal compounds in accordance with required emissions levels), the air separation unit and the combined–cycle plant. The modular design (of gas generation, gas–turbine system, HRSG and the steam–turbine system) offers the possibility of phased construction as well as retrofitting of CC plants with a gasification plant, thus replacing the 'standard' gas–turbine fuels (natural gas or fuel oil) by syngas produced from coal or refinery residues. Currently, over 6 GW of coal and refinery residue based IGCC projects are either under construction or planned. This higher efficiency