

**Economic evaluation of the gasification of refinery residues for the coproduction of hydrogen, electricity, and syngas.** Lee, A. K. K.; Aitani, A. M.; Hamid, S. H.. Petroleum and Gas Technology Division The Research Institute, King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia. Arabian Journal for Science and Engineering (1996), 21(4B), 693-706. Publisher: King Fahd University of Petroleum and Minerals, CODEN: AJSEDY ISSN: 0377-9211. Journal written in English. CAN 126:214154 AN 1997:202619 CAPLUS (Copyright (C) 2008 ACS on SciFinder (R))

### **Abstract**

Available methods to reduce the amt. of refinery residues by phys. sepn., carbon rejection, or hydrogen addn., produce heavier residues of their own that need to be utilized or disposed of. One alternative that totally converts the residue and at the same time complies with environmental restraints is the gasification or partial oxidn. process. Practically, all types of refinery high-sulfur heavy residues may be utilized to produce hydrogen, syngas, or power. This study briefly describes the gasification process for heavy residues and com. projects in its application in refinery power generation. The economics of three options, namely, for hydrogen prodn., for power generation, and for coprodn. of hydrogen, power, and syngas, are examd. and compared. All three options provide reasonable payback periods of 3.3, 4.7, and 4.9 yr, resp. However, each refinery must det. its own needs and export potential in its configuration for coprodn. and final implementation of heavy residue gasification.