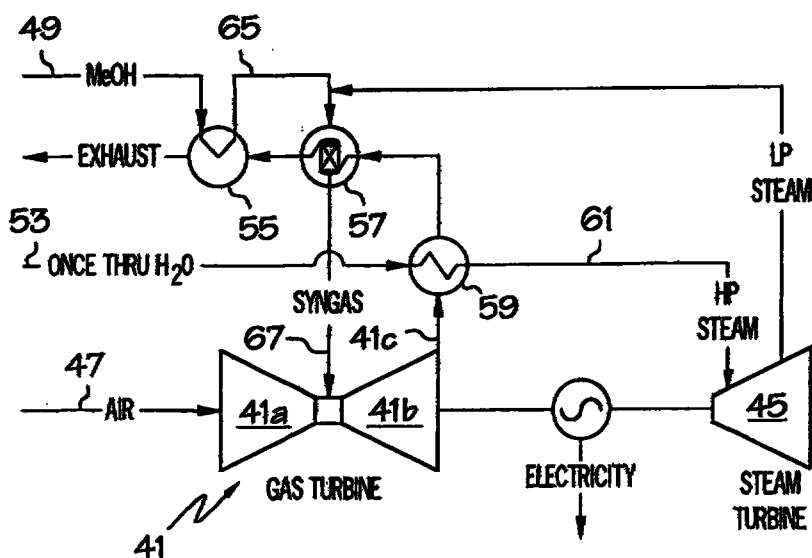




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(21) International Application Number: PCT/US98/17149 (22) International Filing Date: 19 August 1998 (19.08.98) (30) Priority Data: 08/914,920 19 August 1997 (19.08.97) US (71) Applicant: EXXON CHEMICAL PATENTS INC. [US/US]; 5200 Bayway Drive, Baytown, TX 77520-5200 (US). (72) Inventors: JANDA, Gary, F.; 14815 Redwood Bend Trail, Houston, TX 77062 (US). KUECHLER, Keith, H.; 912 Applewood Drive, Friendswood, TX 77546 (US). GUIDE, John, J.; 2906 Cedarville Drive, Kingwood, TX 77345 (US). MITTRICKER, Frank, F.; 3411 Stanford, Houston, TX 77006 (US). ROBERTO, Frank, R.; 5006 Maple Terrace Drive, Kingwood, TX 77345 (US). (74) Agents: KELLER, Bradley, A. et al.; Exxon Chemical Com- pany, P.O. Box 2149, Baytown, TX 77522-2149 (US).		(81) Designated States: BR, CN, JP, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>

(54) Title: HIGH EFFICIENCY REFORMED METHANOL GAS TURBINE POWER PLANTS**(57) Abstract**

The present invention is a high efficiency reformed methanol (syngas) gas turbine power plant. The invention utilizes a Back Pressure steam Turbine (BPT) to maximize the thermal efficiency and the power output of a reformed methanol gas turbine power generation system. Methanol feed is reformed to syngas (H_2 and CO_2) prior to combustion in the BPT turbine. The endothermic reforming reaction, and the generation of the significant amount of process steam essential for reforming, recovers most of the useful heat in the gas turbine exhaust gas. The process steam pressure is set by the gas turbine inlet requirements, and can be referred to as low pressure steam. Additional heat in the gas turbine exhaust gas is recovered by generating the system's process steam at an elevated pressure, rather than the required low pressure. This high pressure steam is used to drive a BPT, generating additional power and the discharged low pressure steam from the BPT is used as the process steam for the methanol reformer.