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(71) Applicant: **TECHNIP FRANCE** [FR/FR]; 6-8, Allée
de L'Arche, Faubourg de L'Arche, 92400 COURBEVOIE
(FR).

(72) Inventor: **OUD, Peter**; Raminhout 16, 2719 KN Zoeter-
meer (NL).

(74) Agent: **WITMANS, H. A.**; V.O. P.O. Box 87930, 2508 DH
Den Haag (NL).

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(54) Title: ULTRA-LOW EMISSION ETHYLENE PLANT

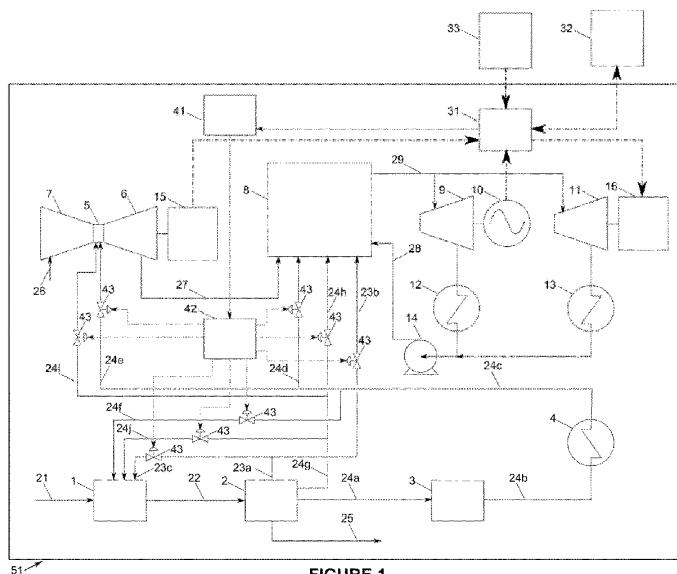


FIGURE 1

(57) Abstract: The invention relates to an ethylene plant, comprising - a cracking furnace for converting a hydrocarbon feedstock into a cracked gas stream; - a separation section to provide at least an ethylene-enriched product stream, a hydrogen-enriched fuel stream and a methane-enriched fuel stream from the cracked gas stream; - a passage way for feeding at least part of the hydrogen-enriched fuel from the separation section to a burner of the cracking furnace and/or a passage way for feeding at least part of the hydrogen-enriched fuel from the separation section to a burner of a waste heat recovery boiler of a combined cycle gas turbine power plant (CCGT); - a methane storage configured for storing methane-enriched fuel and a passage way for feeding at least part of the methane-enriched fuel from the separation section to the storage; - the CCGT, comprising a gas turbine - comprising a combustor - and a passage way for feeding at least part of the methane-enriched fuel from the storage to the combustor of the gas turbine of the CCGT, which CCGT is

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configured to generate electric power and/or to generate high pressure steam to drive a steam turbine forming part of a steam generation circuit of the ethylene plant; and - an electric power connection for providing part of the power for operating the plant, which is a connection to an electric power system to produce electric power from a renewable source.