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(71) Applicant: **CHEVRON PHILLIPS CHEMICAL COMPANY LP** [US/US]; P.O. Box 4910, The Woodlands, Texas 77387-4910 (US).

(72) Inventors: **KHANKAL, Reza**; Chevron Phillips Chemical Company LP, 1862 KINGWOOD DR, Kingwood, Texas 77339 (US). **WEBSTER-GARDINER, Michael S.**; Chevron Phillips Chemical Company LP, 1862 KINGWOOD DR, Kingwood, Texas 77339 (US). **HILLIER, James L.**; Chevron Phillips Chemical Company LP, 1862 KINGWOOD DR, Kingwood, Texas 77339 (US). **FERN, Jared T.**; Chevron Phillips Chemical Company LP, 1862 KINGWOOD DR, Kingwood, Texas 77339 (US).

(74) Agent: **LEIGH, Samie S.** et al.; Chevron Phillips Chemical Company LP, P.O. Box 4910, The Woodlands, Texas 77387-4910 (US).

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(54) Title: SUSTAINABLE JET FUEL AND PROCESS

(57) Abstract: Described are new processes for making sustainable jet fuels and components thereof, based upon generating bio-ethylene by dehydration of biomass ethanol or a bio-syngas ethanol, and subsequently employing a tailored selection of oligomerization, cyclization, and hydrogenation reactions to generate each class of compounds which can be used as components in a sustainable aviation fuel. For example, bio-ethylene oligomerization can provide olefin oligomers which can be hydrogenated to linear and branched paraffins, these paraffins can be cyclized to form bio-sourced aromatic compounds which subsequently can be hydrogenated to form cycloparaffins or naphthenes. These compounds can be blended to provide sustainable products in the kerosene jet fuel range (C₈-C₁₆) or wide-cut jet fuel range (C₅-C₁₅ or C₄-C₁₆).