

What is claimed is:

1. A process for producing a renewable diesel overhead fraction comprising the steps of
 - a. subjecting a feedstock comprising free fatty acids, mono-, di-, and/or tri-glycerides to hydrodeoxygenation (HDO) to produce an HDO effluent comprising C₁₄-C₁₈ n-paraffins;
 - b. subjecting the HDO effluent to hydroisomerization to produce a hydroisomerizate comprising C₁₄-C₁₈ isoparaffins and unreacted C₁₄-C₁₈ n-paraffins; and
 - c. separating the hydroisomerizate in a flash drum into an overhead renewable diesel fraction and a bottoms fraction wherein both fractions comprise C₁₄-C₁₈ n-paraffins and C₁₄-C₁₈ isoparaffins;

wherein the overhead renewable diesel has a difference of 20 °C or less between its final boiling point (FBP) and its 95% boil-off temperature (T95) according to ASTM D2887 simulated distillation test method;

wherein the overhead renewable diesel fraction has an existent gum value of 7 mg/100 mL or less according to ASTM D381; and

wherein the hydroisomerizate has a value of final boiling point minus 95% boil-off temperature (FBP-T95) that is greater than 30 °C as measured by ASTM D2887 simulated distillation test method.

- ~~2. The process of Claim 1, wherein the overhead renewable diesel fraction has an existent gum value of 7 mg/100 mL or less according to ASTM D381.~~

- ~~3.2.~~ The process of Claim 1, wherein the overhead renewable diesel fraction comprises at least 90% C₁₄-C₁₈ n-paraffins.

- ~~4.3.~~ The process of Claims 1 ~~or 2~~, wherein the overhead renewable diesel fraction is used as jet fuel blendstock.

- ~~5. The process of Claim 1, wherein the separating of the hydroisomerizate is conducted in a flash drum.~~

- ~~6. The process of Claim 1, wherein the separating of the hydroisomerizate is conducted in a wiped film evaporator.~~

~~7. The process of Claim 1, wherein the separating does not include reflux of the overhead renewable diesel fraction.~~

~~8.4.~~ The process of Claim 1, wherein the feedstock comprises tallow, lard, poultry fat, fish oil, canola oil, rapeseed oil, palm oil, soybean oil, corn oil, jatropha oil, carinata oil, cotton seed oil, hempseed oil, sunflower oil, greases from restaurants and/or food processing operations, microbial oil, or a combination of any two or more thereof.

~~9.5.~~ The process of Claim 1, wherein the cloud point of the overhead renewable diesel fraction is less than -5 °C.

~~10.6.~~ The process of Claim ~~95~~, wherein the cloud point of the overhead renewable diesel fraction is between -12 °C and -30 °C.

~~11.7.~~ The process of Claim 1, wherein the hydrodeoxygenation is performed under at least 500 psia hydrogen partial pressure at temperatures in the 500-700 °F range over a sulfided molybdenum catalyst promoted by nickel and/or cobalt.

~~12.8.~~ The process of Claim 1, wherein the hydroisomerization is performed under at least 500 psia hydrogen partial pressure at temperatures in the 580-680 °F range over a bifunctional catalyst comprising platinum or tungsten and a support comprising silica.

~~13.9.~~ The process of Claim 1, wherein the feedstock is diluted with a hydrocarbon solvent.

~~14.10.~~ The process of Claim ~~913~~, wherein the hydrocarbon solvent is a petroleum middle distillate.

~~15. A jet fuel comprising between about 1 vol.% and about 30 vol.% of the overhead renewable diesel fraction of Claims 1 or 2.~~