CLAIMS

What is claimed is:

1. A method for forming a jet boiling range composition and a diesel boiling range composition, comprising:

blending a distillate boiling range feedstock comprising a renewable distillate component and a mineral feedstock component to form a combined feedstock, the distillate boiling range feedstock comprising 95 wt% or more of the renewable distillate component, the combined feedstock comprising a weight ratio of the distillate boiling range feedstock comprising the renewable distillate component to a diesel boiling range portion of the mineral feedstock component of 0.01 to 5.0, the distillate boiling range feedstock comprising the renewable distillate component comprising 10 wt% or more of components boiling at 285°C or lower; and

separating the combined feedstock to form at least a jet boiling range composition and a diesel boiling range composition,

the jet boiling range composition comprising a flash point of 38°C or more, an aromatics content of 3.0 wt% to 15 wt%, a T10 distillation point of 205°C or less, and a final boiling point of 285°C or less,

the diesel boiling range composition comprising a sulfur content of 50 wppm to 2000 wppm, a final boiling point of 300°C or more and a T90 distillation point of 370°C or less.

2. The method of claim 1, wherein the distillate boiling range feedstock comprising a renewable distillate component comprises a T10 distillation point of 280°C or less.

3. The method of any of the above claims, wherein the jet boiling range composition comprises an aromatics content of 3.0 wt% to 15 wt%, or 3.0 wt% to 10 wt%, or 5.0 wt% to 15 wt%; or wherein the jet boiling range composition comprises a cetane index of 25 or more, or 25 – 60, 25 – 45, or 30 – 45, or 35 – 45; or wherein the jet boiling range composition comprises a specific energy of 42.8 MJ/kg or more; or a combination of two or more thereof.

4. The method of any of the above claims, wherein the jet boiling range composition comprises a weight ratio of aliphatic sulfur to total sulfur of 0.02 or more.

5. The method of any of the above claims, wherein the diesel boiling range composition comprises a density of 800 kg/m^3 or more; or wherein the diesel boiling range composition comprises an aromatics content of 20 wt% or less; or wherein the diesel boiling

range composition comprises a kinematic viscosity at 40°C of 2.0 cSt or more and/or 3.5 cSt or less; or a combination of two or more thereof; or a combination of three or more thereof.

6. The method of any of the above claims, wherein the jet boiling range composition optionally comprises at least a portion of the jet boiling range fraction, or the jet boiling range composition optionally consisting of the jet boiling range fraction.

7. The method of claim 6, wherein the method further comprises hydroprocessing at least a portion of the jet boiling range fraction to form a jet hydroprocessing effluent.

8. The method of claim 6 or 7, wherein the method further comprises hydroprocessing at least a portion of the diesel boiling range fraction to form a diesel hydroprocessing effluent, the diesel boiling range composition comprising at least a portion of the diesel hydroprocessing effluent, the jet boiling range composition optionally further comprising at least a portion of the diesel hydroprocessing effluent.

9. The method of claim 8, further comprising combining the at least a portion of the diesel boiling range fraction with a second renewable distillate feedstock portion, the hydroprocessing of the at least a portion of the diesel boiling range fraction further comprising hydroprocessing the second renewable distillate feedstock portion.

10. The method of any of claims 6 – 9, wherein separating the combined feed further comprises forming at least one additional distillate boiling range fraction, wherein the method further comprises exposing the at least one additional distillate boiling range fraction to hydroprocessing conditions, fluid catalytic cracking conditions, or a combination thereof to form an additional distillate processing effluent, and wherein hydroprocessing at least a portion of the jet boiling range fraction comprises hydroprocessing at least a portion of the additional distillate processing effluent.

11. The method of any of the above claims, wherein blending the distillate boiling range feedstock comprising a renewable distillate component and the mineral feedstock component comprises blending the distillate boiling range feedstock comprising a renewable distillate component with a feedstock comprising 98.0 wt% or more of the mineral feedstock component relative to a weight of the feedstock; or a combination thereof.

12. The method of any of the above claims, wherein the renewable distillate component comprises renewable diesel in accordance with ASTM D975, or wherein the renewable distillate component comprises paraffinic diesel in accordance with EN 15940, or a combination thereof.

13. The method of any of claims 1 – 12, wherein the renewable distillate component comprises hydroprocessed biomass but does not contain renewable diesel, or wherein the renewable distillate component comprises hydroprocessed biomass but does not contain paraffinic diesel, or a combination thereof.

14. A method for forming a jet boiling range composition and a diesel boiling range composition, comprising:

blending a distillate boiling range feedstock comprising a renewable distillate component and a mineral feedstock component to form a combined feedstock, the combined feedstock comprising a weight ratio of the distillate boiling range feedstock comprising the renewable distillate component to a diesel boiling range portion of the mineral feedstock component of 0.1 to 5.0, the distillate boiling range feedstock comprising the renewable distillate component comprising 10 wt% or more of components boiling at 285°C or lower;

separating the combined feed to form at least a jet boiling range fraction and a diesel boiling range fraction; and

hydroprocessing at least a portion of the jet boiling range fraction to form a first hydroprocessing effluent, the jet boiling range composition comprising a portion of the first hydroprocessing effluent,

the jet boiling range composition comprising a flash point of 38°C or more, an aromatics content of 3.0 wt% to 15 wt%, a T10 distillation point of 205°C or less, and a final boiling point of 285°C or less,

the diesel boiling range composition comprising a final boiling point of 300°C or more and a T95 distillation point of 370°C or less.