CLAIMS

What is claimed is:

1. A fuel or fuel blending component comprising a kinematic viscosity at 50°C of 5.0 cSt to 100 cSt, a sulfur content of 150 wppm or less, a density at 15°C of 800 kg/m^3 to 900 kg/m^3, a CCAI of 800 or less and an aromatics content of 5.0 wt% to 25 wt%.

2. The fuel or fuel blending component of claim 1, wherein the fuel or fuel blending component comprises a T90 distillation point of 525°C or more, or wherein the fuel or fuel blending component comprises a sulfur content of 50 wppm to 150 wppm, ~~or wherein the density at 15°C is 800 kg/m^3 to 860 kg/m^3,~~ or a combination thereof.

3. The fuel or fuel blending component of ~~claims 1 or 2~~ claim 1, wherein the sulfur content is 5.0 wppm or less, or wherein the nitrogen content is 5.0 wppm or less, or a combination thereof.

4. The fuel or fuel blending component of ~~claims 1-3~~ claim 1, wherein the fuel or fuel blending component comprises a T90 distillation point of 525°C or less, or wherein the fuel or fuel blending component comprises a viscosity index is 120 or more, or wherein the fuel or fuel blending component comprises a BMCI of 30 or less, ~~or wherein the fuel or fuel blending component comprises a CCAI of 800 or less,~~ or a combination thereof.

5. The fuel or fuel blending component of claim 1, wherein the fuel or fuel blending component comprises a nitrogen content of 100 wppm or less, or wherein the density at 15°C is 800 kg/m^3 to 860 kg/m^3, or wherein the fuel or fuel blending component comprises a T10 distillation point of 350°C or more, or a combination thereof.

6. The fuel or fuel blending component of claim 1, wherein the aromatics content is 12 wt% to 25 wt%, or wherein the aromatics content is 5.0 wt% to 15 wt%.

7. The fuel or fuel blending component of claim 1, wherein the fuel or fuel blending component comprises 1.0 vol% to 80 vol% of a renewable fraction and 20 vol% to 99 vol% of a hydrotreated atmospheric resid fraction, the hydrotreated atmospheric resid fraction comprising a kinematic viscosity at 50°C of 5.0 cSt to 100 cSt, a sulfur content of 150 wppm or less, a density at 15°C of 800 kg/m^3 to 900 kg/m^3, and an aromatics content of 5.0 wt% to 25 wt%.

8. The fuel or fuel blending component of claim 7, wherein the renewable fraction comprises a hydrotreated vegetable oil, a biodiesel, a fatty acid methyl ester, or a combination thereof.

9. The fuel or fuel blending component of claim 1, wherein the fuel or fuel blending component comprises 1.0 vol% to 80 vol% of a distillate fraction, a resid fraction, or a combination thereof, and 20 vol% to 99 vol% of a hydrotreated resid fraction, the hydrotreated resid fraction comprising a kinematic viscosity at 50°C of 5.0 cSt to 100 cSt, a sulfur content of 150 wppm or less, a density at 15°C of 800 kg/m^3 to 900 kg/m^3, and an aromatics content of 5.0 wt% to 25 wt%.

10. The fuel or fuel blending component of claim 9, wherein the hydrotreated resid fraction comprises a sulfur content of 5.0 wppm or less, or wherein the hydrotreated resid fraction comprises a nitrogen content of 5.0 wppm or less, or a combination thereof.

11. The fuel or fuel blending component of claim 1, wherein the fuel or fuel blending component comprises a pour point of 0°C or more.

~~5.~~12. A fuel or fuel blending component comprising a density of 930 kg/m^3 or less, a kinematic viscosity at 50°C of 100 cSt or more, a sulfur content of 50 wppm to 150 wppm, a BMCI of 50 or less, and a CCAI of 800 or less.

13. The fuel or fuel blending component of claim 12, wherein the fuel or fuel blending component comprises a nitrogen content of 100 wppm or less, or wherein the density at 15°C is 800 kg/m^3 to 900 kg/m^3, or a combination thereof.

~~6.~~14. The fuel or fuel blending component of claim ~~5~~ 12, wherein the fuel or fuel blending component comprises a T10 distillation point of 400°C or more, or wherein the fuel or fuel blending component comprises a T90 distillation point of 550°C or more, ~~or wherein the fuel or fuel blending component comprises a viscosity index of 80 or more, or wherein the density at 15°C is 800 kg/m^3 to 900 kg/m^3,~~ or a combination thereof.

~~7. The fuel or fuel blending component of claims 5 or 6, wherein the fuel or fuel blending component comprises a nitrogen content of 100 wppm or less, or wherein the fuel or fuel blending component comprises a T10 distillation point of 350°C or more, or wherein the fuel or fuel blending component comprises a pour point of 0°C or more, or a combination thereof.~~

~~8.~~15. The fuel or fuel blending component of ~~claims 5-7~~ claim 12, wherein the fuel or fuel blending component comprises a viscosity index is 80 or more, or wherein the aromatics content is 12 wt% to 25 wt%, or ~~wherein the aromatics content is 5.0 wt% to 15 wt%~~ a combination thereof.

16. The fuel or fuel blending component of claim 12, wherein the fuel or fuel blending component comprises 1.0 vol% to 80 vol% of a renewable fraction and 20 vol% to 99 vol% of a hydrotreated resid fraction, the hydrotreated resid fraction comprising a density of 930 kg/m^3 or less, a kinematic viscosity at 50°C of 100 cSt or more, a sulfur content of 50 wppm to 150 wppm or less, a BMCI of 50 or less, and a CCAI of 800 or less.

~~9. A blended fuel or blended fuel blending component comprising 1.0 vol% to 80 vol% of a distillate fraction, a resid fraction, or a combination thereof, and 20 vol% to 99 vol% of a fuel or fuel blending component according to any of claims 1-8.~~

~~10. The blended fuel or blended fuel blending component of claim 9, wherein the distillate fraction, the resid fraction, or the combination thereof comprises a renewable fraction.~~

~~11.~~17. The ~~blended~~ fuel or ~~blended~~ fuel blending component of claim ~~10~~ 16, wherein the renewable ~~fraction~~ component comprises a hydrotreated vegetable oil, a biodiesel, a fatty acid methyl ester, or a combination thereof.

~~12.~~18. A method for forming a ~~fuel or fuel blending component~~ hydrotreated resid-containing fraction, comprising:

fractionating a crude oil comprising a final boiling point of 550°C or more to form at least a resid-containing fraction, the crude oil comprising a naphthenes to aromatics volume ratio of ~~3.0~~ 2.0 or more and a sulfur content of 0.2 wt% or less; and

hydrotreating the resid-containing fraction to form a ~~fuel or fuel blending component according to any of claims 1-8.~~ hydrotreated resid-containing fraction comprising a density of 930 kg/m^3 or less, a sulfur content of 150 wppm or less, a BMCI of 50 or less, and a CCAI of 800 or less.

19. The method of claim 18, wherein hydrotreated resid-containing fraction comprises a kinematic viscosity at 50°C of 5.0 cSt to 100 cSt, a sulfur content of 150 wppm or less, a density at 15°C of 800 kg/m^3 to 900 kg/m^3, and an aromatics content of 5.0 wt% to 25 wt%.

~~13.~~20. The method of claim ~~12~~ 18, wherein the resid-containing fraction is hydrotreated prior to the fractionating, the fractionating comprising forming at least the ~~fuel or fuel blending component~~ hydrotreated resid-containing fraction.

21. The method of claim 18, wherein the hydrotreated resid-containing fraction comprises a kinematic viscosity at 50°C of 100 cSt or more, and a sulfur content of 50 wppm to 150 wppm.

22. The method of claim 18, wherein the hydrotreated resid-containing fraction comprises a sulfur content of 5.0 wppm or less, or wherein the hydrotreated resid-containing fraction comprises a nitrogen content is 5.0 wppm or less, or a combination thereof.

~~14.~~23. The method of claim ~~12 or 13~~ 18, further comprising blending the ~~fuel or fuel blending component~~ hydrotreated resid-containing fraction with a distillate fraction, resid fraction, or combination thereof to form a blended fuel or ~~blended~~ fuel blending component,

wherein the blended fuel or ~~blended~~ fuel blending component comprises 1.0 vol% to 80 vol% of the distillate fraction, resid fraction, or combination thereof, and 20 vol% to 99 vol% of ~~the fuel or fuel blending component, the distillate fraction resid fraction or combination thereof optionally comprising a renewable fraction.~~ a hydrotreated resid-containing fraction.

~~15. Use of a fuel, fuel blending component, blended fuel, or blended fuel blending component according to any of claims 1 – 11 as a fuel in a combustion device.~~

24. The method of claim 23, wherein the distillate fraction, resid fraction or combination thereof comprises a renewable fraction.

25. The method of claim 24, wherein the renewable fraction comprises a hydrotreated vegetable oil, a biodiesel, a fatty acid methyl ester, or a combination thereof.