CLAIMS:

What is claimed is:

1. A gasoline fuel blending component composition ~~comprising~~ formed by blending components consisting of:

30% to 60% by volume of one or more branched alkane components;

22% to 40% by volume of one or more cyclic alkane ~~component~~ components;

2% to 25% by volume of one or more alkylate components, the alkylate components comprising gasoline blendstock components formed by conversion of an olefin with an isoparaffin; ~~and~~

1% to 22% by volume of one or more oxygenate component, and less than 1% aromatics by volume. ~~wherein the fuel blending component composition reduces the criteria emissions of an internal combustion engine on the Worldwide Harmonised Light Vehicles Test Procedure (WLTP) when blended with a conventional fuel.~~

2. The fuel blending component composition according to claim 1 wherein each branched alkane component is independently isobutane, isopentane, isohexane, isoheptane, isooctane, isononane, isodecane, 2,2-dimethyl propane, 2,2-dimethyl butane, 2,2-dimethyl pentane, or 2,2-dimethyl hexane.

3. The fuel blending component composition according to ~~any one of claims 1-2~~ claim 1, wherein the cyclic alkane component is independently cyclobutane, cyclopentane, cyclohexane, cycleoheptane, cyclooctane, cyclononane, or cyclodecane.

4. The fuel blending component composition according to ~~any one of claims 1-3~~ claim 1, wherein the branched alkane component, the cyclic alkane component, the alkylate component, the oxygenate component, or a combination thereof is derived from a renewable or biological source.

5. The fuel blending component composition according to ~~any one of claims 1-4~~ claim 1, wherein each oxygenate component is an alcohol oxygenate, an ether oxygenate, an ester oxygenate, or a ketone oxygenate.

6. The fuel blending component composition according to ~~any one of claims 1-5~~ claim 5, wherein each oxygenate is methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), cyclopentanone, ethyl acetate, methyl acetate, propanol, isopropanol, or isobutanol.

7. The fuel blending component composition ~~according to any one of Clauses 1-6~~ of claim 1, wherein the ~~branched alkane components are between about 30% and about 60% of the total~~ fuel blending component composition comprises less than 0.5% of aromatics by volume.~~; the cyclic alkane components are between about 22% and about 40% of the total fuel composition by volume; the oxygenate components are between about 1% and about 22% of the total fuel composition by~~

~~volume; and the alkylate components are between about 2% and about 25% of the total fuel composition by volume.~~

8. ~~A fuel composition comprising the~~ The fuel blending component composition ~~according to any one of claims 1-7~~ of claim 1, wherein the fuel blending component composition ~~exhibits reduced~~ reduces the criteria emissions of an internal combustion engine ~~as compared to the emissions produced using only on otherwise identical fuel without the fuel blending component composition..~~ on the Worldwide Harmonised Light Vehicles Test Procedure (WLTP) when blended with a conventional fuel.

~~9. A fuel composition according to claim 8, further comprising a conventional fuel or a non-conventional fuel.~~

~~10. A fuel composition according to any one of claims 8-9, wherein the fuel blending component composition is between about 5% and about 99.8% of the fuel composition by volume.~~

~~11. A method of reducing the criteria emissions of an internal combustion engine comprising a step of mixing a fuel blending component composition according to claim 1 with a conventional fuel or a non-conventional fuel in a fuel supply for the internal combustion engine to form a blended fuel and combusting the blended fuel.~~

~~12. The method of reducing the criteria emissions of an internal combustion engine according to claim 11 wherein the fuel blending component composition is between about 5% and about 99.8% of the blended fuel by volume.~~

~~13. The method of reducing the criteria emissions of an internal combustion engine according to any one of claims 11-12, wherein the criteria emissions are particle number emissions, particulate matter emissions, NOx emissions, total hydrocarbon (THC) emissions, or a combination thereof.~~

~~14. The method of reducing the criteria emissions of an internal combustion engine according to any one of claims 11-13, wherein the reduced emissions are measured using an WLTP cycle, a Federal Test Procedure (FTP) 75 cycle, an Common Artemis Driving Cycle (CADC), an LA92 cycle, a New European Driving Cycle (NEDC), a Real Driving Emissions (RDE) cycle, or combinations thereof.~~

~~15. The method of reducing the criteria emissions of an internal combustion engine according to any one of claims 11-14, wherein the criteria emissions are particle number emission and the emissions are reduced by about 50 to about 95% as compared to the emissions produced using only the conventional or non-conventional fuel as measured by a WLTP cycle, or wherein the criteria emissions are NOx emissions and the emissions are reduced by about 10 to about 30% as compared to the emissions produced using only the conventional or non-conventional fuel as measured by a WLTP cycle; or wherein the criteria emissions are total hydrocarbon (THC) emissions and the~~

~~emissions are reduced by about 5 to about 15% as compared to the emissions produced using only the conventional or non-conventional fuel as measured by a WLTP cycle.~~