Claims

1. A fuel composition comprising

    a. fossil diesel component

    b. oxygenate component in an amount from 10 vol-% to 40 vol-%, preferably from 10 vol-% to 30 vol-% of the total fuel composition volume, wherein

        i. said oxygenate has molar mass from 128 to 300 g/mol, and

        ii. said oxygenate is of structure

        R_1-O-R_2 (formula 1),

        in which formula R_1 and R_2 are same or different and selected from C_1-C_{15} alkyl groups,

    c. renewable paraffinic diesel component in an amount from 10 vol-% to 30 vol-%, preferably from 15 to 20 vol-% of the total fuel composition volume,

    wherein the sum amount of said oxygenate component and said renewable paraffinic diesel component is from 26 to 70 vol-%, preferably from 30 vol-% to 50 vol-% of the total fuel composition volume.

2. The composition according to claim 1 wherein said oxygenate component is selected from symmetrical or asymmetrical straight chain monoethers, having molar mass from 150 to 300 g/mol, preferably from 150 to 250 g/mol.

3. The composition according to claim 1 wherein the amount of the oxygenate component is about 20 vol-% of the total fuel composition volume.

4. The composition according to claim 1 wherein said oxygenate component is selected from group of di-n-nonyl ether, di-n-decyl ether, di-n-octyl ether, di-n-heptyl ether, di-n-pentyl ether, di-n-hexyl ether, ethyl-dodecyl ether, ethyl-undecyl ether, ethyl-decyl ether, ethyl-octyl ether, propyl-dodecyl ether, propyl-undecyl ether, propyl-decyl ether, propyl-nonyl ether, propyl-octyl ether, propyl-heptyl ether, butyl-dodecyl ether, butyl-undecyl ether, butyl-nonyl ether, butyl-heptyl ether, butyl-hexyl ether, pentyl-dodecyl ether, pentyl-undecyl ether, pentyl-nonyl ether, pentyl-octyl ether, pentyl-heptyl ether, or pentyl-hexyl ether, ethyl-nonyl ether, butyl-decyl ether, pentyl-decyl

ether, octyl-tert-butyl ether, dodecyl-tert-butyl ether, ethyl-hexyl-tert-butyl ether, di-ethyl-hexyl ether, and mixtures thereof.

5. The composition according to claim 1 wherein said oxygenate component is selected from symmetrical or asymmetrical straight chain monoethers, preferably said oxygenate component comprises di-n-pentyl ether.

6. The composition according to any one of the preceding claims wherein said renewable paraffinic diesel component comprises hydrocarbons produced from biomass with a process selected from gasification of biomass to produce syngas and production of paraffins from said syngas by Fischer-Tropsch synthesis to obtain a paraffinic C_9-C_{24} hydrocarbon fraction, hydrotreatment of vegetable oil, animal fat, fish fat, fish oil, algae oil, microbial oil and/or wood and/or other plant based oil as well as recyclable waste and/or residue or a combination thereof to obtain a paraffinic C_9-C_{24} hydrocarbon fraction, optionally followed by isomerization, or a combination thereof.

7. The composition according to any one of the preceding claims, wherein said renewable paraffinic diesel component comprises hydrotreated vegetable oil, hydrotreated wood and/or other plant based oil, hydrotreated animal fat, hydrotreated fish fat and oil, hydrotreated algae oil, hydrotreated microbial oil, hydrotreated recyclable waste, hydrotreated recyclable residue, or a combination thereof.

8. The composition according to any one of the preceding claims, wherein in said renewable paraffinic diesel component the amount of the paraffinic C_{15}-C_{18} hydrocarbons is at least 70 vol-%, more preferably at least 80 vol-%, most preferably at least 90 vol-%.

9. The composition according to any one of the preceding claims, wherein in said renewable paraffinic diesel component the amount of the paraffinic components in the range of carbon number C_3-C_{14} is less than 25 vol-%, such as less than 20 vol-%, less than 10% vol-%, or less than 7 vol-%.

10. The composition according to any one of the preceding claims, wherein in said renewable paraffinic diesel component the amount of the paraffinic components in the range of carbon number C_{19}-C_{24} is less than 25 vol-%, such as less than 20 vol-%, less than 10 vol-%, or less than 5 vol-%.

11. A method for producing a fuel composition according to any one of claims 1-10, wherein the renewable paraffinic diesel component is produced from a renewable feedstock by a process selected from

    a. hydrogenation or deoxygenation of vegetable oil, animal fat, fish fat, fish oil, algae oil, microbial oil and/or wood and/or other plant based oil as well as recyclable waste and/or residue or a combination thereof to obtain a paraffinic C_9-C_{24} hydrocarbon fraction, which is optionally subjected to isomerization, or

    b. gasification of biomass to produce syngas and production of paraffins from said syngas by Fischer-Tropsch synthesis to obtain a paraffinic C_9-C_{24} hydrocarbon fraction, or

    c. a combination thereof,

    and blending the renewable paraffinic diesel component thereby obtained, a monoether oxygenate component having molar mass from 128 to 300 g/mol, and fossil diesel component.

12. A method according to claim 11, wherein the feedstock for renewable paraffinic diesel component comprises vegetable oil, wood and/or other plant based oil, animal fat, fish fat and oil, algae oil, microbial oil, recyclable waste, recyclable residue, or a combination thereof.

13. Use of a monoether oxygenate component having molar mass from 128 to 300 g/mol and a renewable paraffinic diesel component as fuel blending components to fossil fuel for reducing particulate matter emissions, wherein the total fuel composition comprises a monoether oxygenate component, having molar mass from 128 to 300 g/mol in an amount from 10 vol-% to 40 vol-%, preferably from 10 vol-% to 30 vol-% and renewable diesel component in an amount from 10 vol-% to 30 vol-%, preferably from 15 to 20 vol-%, and the sum amount of said oxygenate component and said renewable paraffinic diesel component is from 26 to 70 vol-%, preferably from 30 vol-% to 50 vol-% of the total fuel composition weight.