Claims

1. A method of manufacturing a diesel fuel composition comprising

    a. a hydrotreatment step comprising catalytically hydrotreating renewable raw material comprising fatty acids, triglycerides, fatty acid esters, or combinations thereof into n-paraffins;

    b. an isomerising step comprising catalytically isomerising the n-paraffins into branched chain paraffins to obtain a hydrotreated renewable fuel component, wherein the amount of the paraffinic component in the range of carbon number C_{15}-C_{18} is at least 70 wt- %, and the i-paraffin/n-paraffin ratio of the hydrotreated renewable component is at least 2.2 w/w;

    c. adding a fossil fuel component to the hydrotreated renewable fuel component; and

    d. adding 2-ethylhexyl nitrate to a concentration in the range 100-1000mg/kg ;

    wherein the step b. is carried out in the absence of the hydrotreating catalyst used in the step a.

2. The method of claim 1 wherein the renewable raw material comprises vegetable oil, wood and/or other plant based oil, animal fat, fish fat and/or fish oil, algae oil, microbial oil, fats contained in plants bred by means of gene manipulation, recyclable waste, recyclable residue, or a combination thereof.

3. The method of claim 1 or 2 wherein the renewable raw material comprises rapeseed oil, colza oil, canola oil, tall oil, sunflower oil, soybean oil, hempseed oil, olive oil, linseed oil, mustard oil, palm oil, peanut oil, castor oil, coconut oil, lard, tallow, train, fats contained in milk, or a combination thereof.

4. The method of any one of claims 1-3 wherein in the hydrotreated renewable fuel component the amount of the paraffinic component in the range of carbon number C_{15}-C_{18} is more than 80 wt-%, most preferably more than 90 wt-%.

5. The method of any one of claims 1-4 wherein the i-paraffin/n-paraffin ratio of the hydrotreated renewable component is at least 2.3 w/w, at least 3 w/w or at least 4 w/w.

6. The method of any one of claims 1-5, wherein the renewable raw material is fed into the hydrotreatment step a. in a feed comprising less than 10 w-ppm alkaline metals and alkaline earth metals calculated as elemental alkaline metals and elemental alkaline earth metals, less than 10 w-ppm other metals calculated as elemental metals, and less than 30 w-ppm phosphorus calculated as phosphorus.

7. The method of claim 6 wherein the feed comprises a fresh feed of the renewable raw material and a feed of a diluting agent, and wherein the diluting agent:fresh feed ratio is 10-30:1, preferably 12-25:1, and wherein the diluting agent is selected from hydrocarbons and recycled products of the process, or a mixture thereof.

8. A diesel fuel component comprising a hydrotreated renewable fuel component and 100-1000mg/kg 2-ethylhexyl nitrate, wherein in the hydrotreated renewable fuel component the amount of the paraffinic component in the range of carbon number C_{15}-C_{18} is at least 70 wt-%, and the i-paraffin/n-paraffin ratio of the hydrotreated renewable component is at least 2.2 w/w.

9. The diesel fuel component of claim 8, wherein in the hydrotreated renewable fuel component the i-paraffin/n-paraffin ratio of the hydrotreated renewable component is at least 2.3 w/w, at least 3 w/w or at least 4 w/w.

10. The diesel fuel component of claim 8 or 9 having a cloud point of at least -10 °C.

11. A use of the diesel fuel component of any one of claims 8-10 for increasing cetane number and improving cold properties of a diesel fuel.

12. The use of claim 11 wherein the amount of the diesel fuel component in the diesel fuel is selected from the range 5-90 vol-%, more preferably from the range 20-80 vol-%.

13. The use of any one of claims 11-12 wherein the diesel fuel is fossil fuel, renewable fuel or a blend comprising fossil fuel and renewable fuel.

14. A fuel composition comprising:

    a. the diesel fuel component of any one of claims 8-10; and

    b. a fossil fuel component

15. The fuel composition of claim 14 wherein the content of the hydrotreated renewable fuel component in the fuel composition is in the range of 5-90 vol-%, more preferably in the range of 20-80 vol-%.