Claims:

1. A method for producing a mixture of hydrocarbons, the method comprising the steps of:

(a) providing a renewable paraffin composition containing more than 70 wt-% isoparaffins and more than 20 wt% multiple branched isoparaffins;

(b) combining fossil naphtha with the renewable paraffin composition to form a blend; and

(c) thermally cracking the blend to produce a mixture of hydrocarbons.

2. The method according to claim 1, wherein the renewable paraffin composition contains at least 75 wt-%, preferably at least 80 wt-%, more preferably at least 85 wt-%, even more preferably at least 90 wt-% isoparaffins.

3. The method according to claim 1, wherein the isoparaffin content of the renewable paraffin composition is in the range from 73 wt-% to 95 wt-%.

4. The method according to any preceding claim, wherein the renewable paraffin composition contains at least 25 wt-% multiple branched isoparaffins, preferably at least 30 wt-% multiple branched isoparaffins, more preferably at least 35 wt-% multiple branched isoparaffins, and even more preferably at least 40 wt-% multiple branched isoparaffins.

5. The method according to any preceding claim, wherein the renewable paraffin composition contains at least 90 wt-% paraffins, preferably at least 95 wt-% paraffins, and more preferably at least 99 wt-% paraffins.

6. The method according to claim 1, wherein the renewable paraffin composition contains more than 20 wt-% multiple branched isoparaffins, the total amount of isoparaffins in the renewable paraffin composition being more than 70 wt-% and the total amount of paraffins in the renewable paraffin composition being at least 90 wt-%.

7. The method according to any preceding claim, wherein fossil naphtha is combined with the renewable paraffin composition such that the blend contains at least 1 wt-%, preferably at least 5 wt-%, more preferably at least 10 wt-%, and even more preferably at least 20 wt-% fossil naphtha, the sum of the wt-% amounts of the renewable paraffin composition and of the fossil naphtha in the blend preferably being at least 90 wt-%, more preferably at least 95 wt-%, and even more preferably at least 99 wt-%, of the total weight of the blend.

8. The method according to any preceding claim, wherein fossil naphtha is combined with the renewable paraffin composition such that the blend contains at most 99 wt-%, preferably at most 95 wt-%, more preferably at most 90 wt-%, and even more preferably at most 80 wt-% fossil naphtha.

9. The method according to any preceding claim, wherein the renewable paraffin composition and the fossil naphtha form one liquid phase above the pour point of the blend.

10. The method according to any preceding claim, wherein the thermal cracking is steam cracking, and wherein thermally cracking the blend is preferably performed with a cracker for thermally cracking liquid fossil feeds.

11. The method according to any preceding claim, wherein providing a renewable paraffin composition comprises

(i) preparing a hydrocarbon raw material from a renewable feedstock; and

(ii) subjecting at least straight chain hydrocarbons in the hydrocarbon raw material to an isomerization treatment to prepare the renewable paraffin composition; and

wherein subjecting at least straight chain hydrocarbons in the hydrocarbon raw material to an isomerization treatment comprises controlling the isomerization degree of the renewable paraffin composition being prepared, and optionally controlling production of monobranched isoparaffins and multiple branched isoparaffins during the isomerization treatment.

12. The method according to claim 11, wherein preparing a hydrocarbon raw material comprises

subjecting the renewable feedstock to a deoxygenation treatment, wherein the deoxygenation treatment is preferably hydrotreatment, preferably hydrodeoxygenation; and/or

hydrocracking hydrocarbons in the hydrocarbon raw material.

13. The method according to any preceding claim, wherein the renewable paraffin composition comprises at least one of a heavy fraction having a boiling point ranging from 180 to 360 ˚C and a light fraction having a boiling point ranging from 30 to 180 ˚C, and wherein the blend comprises the heavy fraction and/or the light fraction.

14. The method according to any preceding claim, wherein the renewable paraffin composition is selected from one of fractions A and B, wherein;

fraction A comprises more than 50 wt-%, preferably at least 75 wt-%, more preferably at least 90 wt-% C10-C20 hydrocarbons, the content of even-numbered hydrocarbons in the C10-C20 range being preferably more than 50 wt-%, and the fraction A containing at most 1.0 wt-%, preferably at most 0.5 wt-%, more preferably at most 0.2 wt.-% aromatics, and less than 2.0, preferably at most 1.0 wt-%, more preferably at most 0.5 wt-% olefins, and less than 10 wt-%, preferably less than 5 wt-%, and more preferably less than 3 wt-% napthenes; and

fraction B comprises more than 50 wt-%, preferably at least 75 wt-%, more preferably at least 90 wt-% C5-C10 hydrocarbons, and the fraction B containing at most 1.0 wt-%, preferably at most 0.5 wt-%, more preferably at most 0.2 wt-% aromatics, and less than 2.0, preferably at most 1.0 wt.-%, more preferably at most 0.5 wt-% olefins, and less than 10 wt-%, preferably less than 5 wt-%, and more preferably less than 3 wt-% napthenes.

15. A blend for producing a mixture of hydrocarbons by thermal cracking, the blend containing a renewable paraffin composition and fossil naphtha,

wherein the renewable paraffin composition contains more than 70 wt-%, isoparaffins and more than 20 wt-% multiple branched isoparaffins.

16. The blend according to claim 15, wherein the isoparaffin content of the renewable paraffin composition is in the range from 73 wt-% to 95 wt-%.

17. The blend according to claim 15 or 16, wherein the ratio of the wt-% amount isoparaffins of the renewable paraffin composition to the wt-% amount of n-paraffins of the renewable paraffin composition is at least 2.5, preferably at least 4.0, more preferably at least 5.5, even more preferably at least 9.0.

18. The blend according to any of claims 15 to 17, wherein the renewable paraffin composition contains at least 25 wt-% multiple branched isoparaffins, preferably at least 30 wt-% multiple branched isoparaffins, more preferably at least 35 wt-% multiple branched isoparaffins, and even more preferably at least 40 wt-% multiple branched isoparaffins.

19. The blend according to any of claims 15 to18, wherein the renewable paraffin composition contains at least 75 wt-%, further preferably at least 80 wt-%, preferably at least 85 wt-%, more preferably at least 90 wt-% isoparaffins.

20. The blend according to any of claims 15 to 19, wherein the ratio of the wt-% amount multiple branched isoparaffins of the renewable paraffin composition to the combined wt-% amounts of n-paraffins and monobranched isoparaffins of the renewable paraffin composition is at least 0.30, preferably at least 0.40, more preferably at least 0.50, even more preferably at least 0.65.

21. The blend according to claim 15, wherein the renewable paraffin composition contains more than 20 wt-% multiple branched isoparaffins, the total amount of isoparaffins in the renewable paraffin composition being more than 70 wt-% and the total amount of paraffins in the renewable paraffin composition being at least 90 wt-%.

22. The blend according to any of claims 15 to 21, wherein the blend comprises at least 1 wt-%, preferably at least 5 wt-%, more preferably at least 10 wt-%, and even more preferably at least 20 wt-% fossil naphtha.

23. The blend according to any of claims 15 to 22, wherein the blend contains at most 99 wt-%, preferably at most 95 wt-%, more preferably at most 90 wt-%, and even more preferably at most 80 wt-% fossil naphtha.