CLAIMS

1. A process for producing a renewable hydrocarbon fuel product, the process comprising the steps of:

hydrotreating a renewable feed stock to produce a renewable paraffinic intermediate comprising at least 95% C8-C20 hydrocarbons;

~~optionally blending at least 1% by volume of said renewable paraffinic intermediate with an additional feed to produce a blend;~~ and

reacting said renewable paraffinic intermediate ~~or said blend containing at least 1% by volume of said renewable paraffinic intermediate~~ in a Fluid Catalytic Cracking (FCC) reaction zone under conditions sufficient to crack at least a portion of said renewable paraffinic intermediate ~~or said blend~~ to produce a renewable hydrocarbon fuel product;

wherein the renewable paraffinic intermediate is not isomerized.

~~2. The process of claim 1, further comprising the step of at least partially isomerizing said renewable paraffinic intermediate prior to said reacting step.~~

~~3~~2. The process of claim 1, further comprising the step of pre-treating said renewable feed stock.

~~4. The process of claim 3, further comprising the step of blending said renewable feed stock with a petroleum feed stock prior to or during said pre-treating step.~~

~~5. The process of claim 1, further comprising the step of blending said renewable feed stock with a petroleum feed stock prior to or during said hydrotreating step.~~

~~6~~3. The process of claim 1, wherein said reacting step comprises fluid catalytic cracking.

~~7~~4. The process of claim 1, wherein conditions sufficient to crack at least a portion of said renewable paraffinic intermediate ~~or blend~~ comprise a reaction temperature ranging from 400 °C to 800 °C.

~~8~~5. The process of claim 1, wherein conditions sufficient to crack at least a portion of said renewable paraffinic intermediate ~~or blend~~ comprise a reactor pressure ranging from greater than 0 to 80 psig.

~~9. The process of claim 1, further comprising the step of blending said renewable paraffinic intermediate with a petroleum-based feed to produce a renewable paraffinic intermediate blend.~~

~~10. The process of claim 9, wherein said renewable paraffinic intermediate feed blended with said petroleum-based feed is in a range selected from greater than 0% and less than 99%, greater than 0% and less than 80%, greater than 0% and less than 70%, greater than 0% and less than 60%, greater than 0% and less than 50%, greater than 0% and less than 40%, greater than 0% and less than 30%, greater than 0% and less than 20%, or greater than 0% and less than 10% by volume of said renewable paraffinic intermediate.~~

~~11. The process of claim 1, further comprising the step of blending said renewable hydrocarbon fuel product with a petroleum fuel product and/or with one or more renewable fuels.~~

~~12~~6. The process of claim 1, further comprising the step of separating said renewable hydrocarbon fuel product into two or more constituent streams.

~~13~~7. The process of claim ~~12~~6, wherein said two or more constituent streams comprise at least two of a fuel gas stream, an ethylene stream, a propylene stream, a butylene stream, an LPG stream, a naphtha stream, an olefin stream, a diesel stream, a gasoline stream, a light cycle oil stream, a jet fuel stream, and a cat unit bottoms (slurry/decant oil) stream.

~~14~~8. The process of claim ~~13~~7, wherein at least one constituent stream is an olefin stream, and further comprising the step of feeding said olefin stream to an alkylation unit and/or a dimersol unit.

~~15~~9. The process of claim 1, wherein said renewable paraffinic intermediate comprises propane.

~~16~~10. The process of claim ~~15~~9, further comprising the step of separating said propane from said renewable paraffinic intermediate and feeding said separated propane to a cracking unit.

~~17~~11. The process of claim 1, wherein said renewable paraffinic intermediate comprises n-butane.

~~18~~12. The process of claim ~~17~~11, further comprising the step of separating said n-butane from said renewable paraffinic intermediate, and isomerizing said n-butane into isobutane.

~~19~~13. The process of claim 1, wherein said reacting step is performed in the absence of a sulfur removal pre-treatment step of said renewable paraffinic intermediate.

~~20. A renewable hydrocarbon fuel product produced in an industrially relevant amount by the process according to claim 1.~~

~~21. A renewable hydrocarbon fuel product having a ^{14}C isotopic ratio characteristic of a blend of petroleum and at least 1% by volume non-petroleum origin and comprising less than about 5% coke.~~

~~22. Gasoline comprising at least 1% by volume of the renewable hydrocarbon fuel product of claim 21.~~

~~23. Aviation fuel comprising at least 1% by volume of the renewable hydrocarbon fuel product of claim 21.~~

~~24. Light cycle oil or diesel comprising at least 1% by volume of the renewable hydrocarbon fuel product of claim 21.~~

~~25. The product of claim 21, wherein said renewable hydrocarbon fuel product has an octane rating ranging from about 40 to about 110.~~

~~26. The product of claim 21, wherein said renewable hydrocarbon fuel product has a specific gravity between about 0.55 and about 0.92.~~

~~27. The product of claim 21, wherein said renewable hydrocarbon fuel product has a sulfur content of less than about 0.2 % by weight of a total weight of said renewable hydrocarbon fuel product.~~

~~28. The product of claim 21, wherein said renewable hydrocarbon fuel product has a cloud point between about -20 °C and about 50 °C.~~

~~29. The product of claim 21, wherein said renewable hydrocarbon fuel product has an isoparaffin to normal paraffin ratio of about 0.0 to about 9.0.~~

~~30. A blended renewable hydrocarbon product, comprising a renewable hydrocarbon fuel product having a ^{14}C isotopic ratio characteristic of a blend of petroleum and at least 1% by volume non-petroleum origin and comprising less than about 5% coke, and a second component comprising at least one of one or more petroleum fuel products and one or more renewable fuels.~~

~~31. A process for producing a renewable hydrocarbon fuel product, the process comprising the steps of:~~

~~hydrotreating a renewable feed stock to produce a renewable paraffinic intermediate;~~

~~blending at least 1% by volume of said renewable paraffinic intermediate with an additional feed to produce a blend;~~

~~distilling said blend to produce at least one distilled fraction having at least 1% by volume of said renewable paraffinic intermediate; and~~

~~reacting said at least one distilled fraction in a reaction zone under conditions sufficient to crack at least a portion of said at least one distilled fraction to produce a renewable hydrocarbon fuel product.~~

~~32. The process of claim 31, wherein the additional feed is a petroleum-based feed.~~