WHAT IS CLAIMED IS:

1. A method for producing renewable hydrocarbon fuels, the method comprising

electrolysis of a mixture comprising (i) free fatty acids from a biorenewable feedstock, and (ii) terminal monomethyl-branched carboxylic acids, to produce an electrolysis product comprising a renewable diesel and optionally a renewable gasoline;

wherein the renewable diesel comprises terminal monomethyl-branched paraffins and terminal monomethyl-branched *cis* alkenes; and

wherein the renewable diesel has cloud point less than -10°C.

2. The method of Claim 1, further comprising hydrogenation of the renewable diesel.

3. The method of Claim 1 or Claim 2, wherein the terminal monomethyl-branched carboxylic acids comprise isobutyric acid.

4. The method of Claim 3, wherein the isobutyric acid is produced from isobutanol, wherein the isobutanol is from a biorenewable feedstock.

5. The method of Claim 4, wherein the isobutyric acid is produced from isobutanol by dehydrogenating the isobutanol to produce isobutyraldehyde and H_2, and oxidizing the isobutyraldehyde to produce the isobutyric acid.

6. The method of Claim 5, wherein the H_2 produced from dehydrogenating the isobutanol is separated from the isobutyraldehyde.

7. The method of Claim 5 or Claim 6, wherein the H_2 from dehydrogenating the isobutanol is used in a hydrogenation reaction.

8. The method of any one of Claims 1-7, wherein the renewable gasoline comprises 2,3-dimethylbutane.

9. The method of any one of Claims 1-8, wherein the free fatty acids comprise fatty acids produced from hydrolysis of fatty acid esters of fat, oil, and/or grease.

10. The method of any one of Claims 1-9, wherein the free fatty acids comprise fatty acids from tall oil and/or produced from the hydrolysis of tall oil esters.

11. The method of any one of Claims 1-10, wherein the free fatty acids comprise fatty acids from palm fatty acid distillate.

12. The method of any one of Claims 1-11, wherein the free fatty acids comprise fatty acids distilled from fats, oils, and/or greases.

13. The method of Claim 12, wherein the free fatty acids comprise fatty acids distilled from palm sludge oil and/or used cooking oil.

14. The method of any one of Claims 1-13, wherein the electrolysis is powered by renewable energy.

15. A renewable diesel comprising

terminal monomethyl-branched isoparaffins; and

terminal monomethyl-branched alkenes where each internal carbon-carbon double bond is *cis;*

wherein the renewable diesel has cloud point less than -10°C.

16. The renewable diesel of Claim 15, wherein the renewable diesel has cetane number greater than 60.

17. A renewable gasoline comprising 2,3-dimethylbutane; wherein the renewable gasoline is produced by a method of any one of claims 1-14.

18. The renewable gasoline of Claim 17, wherein the renewable gasoline has an octane number of 87 or greater.