CLAIMS:

1. A process for converting waste plastic into recycle for polyethylene polymerization comprising:

(a) selecting waste plastics comprising polyethylene and/or polypropylene;

(b) preparing a blend of a bio feedstock and the selected waste plastic with the blend comprising about 20 wt. % or less of the selected waste plastic;

(c) passing the blend at a temperature above the melting point of the waste plastic in the blend to a FCC unit;

(d) recovering a C_3 olefin/paraffin mixture from the FCC unit; and

(e) passing the C_3 mixture to a steam cracker to make ethylene.

2. The process of claim 1, wherein a gasoline and heavy fraction is recovered from the FCC unit.

3. The process of claim 1, wherein the blend of (b) is a hot homogeneous blend of waste plastic and bio oil.

4. The process of claim 1, wherein the ethylene is polymerized to polyethylene.

5. The process of claim 1, wherein the waste plastics selected in (a) comprise plastics from classification group 2, 4, and/or 5.

6. The process of claim 1, wherein a C_4 stream and a heavy fraction are recovered from a FCC unit distillation column and further processed in the refinery to clean gasoline, diesel, or jet fuel.

7. The process of claim 1, wherein the volume flow of the blend to the FCC unit in (c) comprises up to 100 vol. %, or up to 50 vol. %, or up to 25 vol. % of the total hydrocarbon flow to the FCC unit.

8. The process of claim 1, wherein the blend of bio feedstock and selected waste plastic in (b) is prepared by heating the waste plastic and bio feedstock mixture above the melting point of the plastic, and then cooling the blend to a temperature below the melting point of the waste plastic.

9. The process of claim 1, wherein the bio feedstock comprises triglycerides and/or fatty acids.

10. The process of claim 1, wherein the bio feedstock comprises plant-derived oils and/or animal-derived fats and oils.

11. The process of claim 10, wherein the plant derived oils comprise palm oil, canola oil, com oil, soybean oil, or a mixture thereof.

12. The process of claim 10, wherein the bio feedstock comprises tallow, lard, schmaltz, fish oil, or a mixture thereof.

13. The process of claim 1, wherein the bio feedstock comprises palm oil, tallow, soybean oil or a mixture thereof, or the bio feedstock comprises biomass pyrolysis oil.

14. The process of claim 1, wherein the bio feedstock comprises a bio feedstock or mixed bio feedstock having an iodine number of 95 or less, or an iodine number 91 or less, or the bio feedstock comprises a mixture of a bio oil or fat exhibiting an iodine number of 70 or below, and a bio oil or fat exhibiting an iodine number above 70.

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15. The process of claim 1 , wherein a stream of petroleum feedstock comprising LCO or gasoline is added to reduce the blend viscosity.

16. The process of claim 1 , wherein the blend passed to the FCC unit is mixed with a petroleum based feedstock.

17. The process of claim 16, wherein the petroleum feedstock comprises from 1-50 vol% of the mixed blend.

18. The process of claim 17, wherein the petroleum based feedstock comprises atmospheric gas oil, vacuum gas oil (VGO), atmospheric residue, a petroleum derived oil, a petroleum based material, and/or heavy stock recovered from refinery operations, or the petroleum based feedstock comprises light cycle oil (LCO), heavy cycle oil (HCO), FCC naphtha, gasoline, diesel, toluene, and/or aromatic solvent derived from petroleum.

19. The process of claim 1 , wherein the blend passed to the FCC unit is mixed with a recycle stream to thereby lower the blend's viscosity.

20. The process of claim 1, wherein ethylene is polymerized to make polyethylene.