Claims

1. A fuel derived from light tight oil and high sulfur fuel oil, said fuel having an actual sulfur content of 0.5 wt. % or less, and characterized by:

(a) highest boiling point being that of the highest boiling soluble portion of effluent from solvent separation of unconverted oils which portion has been treated by hydroconversion alone or hydroconversion followed by hydrotreating to produce hydroconverted oils comprising hydroconverted high sulfur fuel oil alone or with other hydroconverted residual oil or of untreated residue of light tight oil, combined in said fuel, and

(b) initial boiling point being the lowest boiling portion within ~~either:~~
~~(i)~~ light tight oil, directly combined or fractionated then combined in said fuel~~,~~
~~or~~
~~(ii) said effluent of 1.(a) combined in said fuel~~.

2. A fuel of Claim 1 wherein said 1.(b) lowest boiling portion is a portion of light tight oil not treated by hydrogen in presence of catalyst.

3. A fuel of Claim 1 comprising effluent from solvent separation treated by either by recycle to hydroconversion alone or by separate hydroconversion followed by hydrotreating of all or a portion of said soluble effluent, and combined to form a portion of said fuel without insoluble metals and asphaltenes.

4. A fuel of Claim 1 comprising untreated light tight oil (53 or 3+18+10) and soluble deasphalted oil (311, 317) derived from said solvent separation (301) of hydroconverted oils from hydroconversion (490) of high sulfur fuel oil (55, 57, 59, 317) or of other residuals (30, 50), said fuel (600) having initial boiling point being that of untreated lowest boiling component of light tight oil (53, 18+10) or lighter materials (65) from said hydroconversion (490) or hydroconversion (490) followed by hydrotreating (430, 460) combined in said fuel and highest boiling point being that of highest boiling component of said soluble deasphalted oil (311) or of residue (30,37, 50, 317) of light tight oil (3) combined in said fuel.

5. A fuel of Claim 1 further characterized in having:
(a) an initial boiling point being the lowest boiling point of any untreated component of light tight oil without treatment by hydrogen:
(i) directly fed (53) to combination (600); or
(ii) fed to combination (600) as fractionated (18, 10) light tight oil (3) after still gas removal (4, 6) and combined within said fuel; and

(b) highest boiling point being the highest boiling converted soluble deasphalted oil (311, 317, 85) combined in said fuel, said deasphalted oil (311) derived from solvent separation (301) of unconverted oils (409) of hydroconversion (490), of (i) vacuum residual (50) derived from crude oil (2) and residual (30, 50, 57) of light tight oil (3) or (ii) vacuum residual (50, 57, 317) derived from crude oil (2) alone or with residual (30, 50, 57, 317) of light tight oil (3) with added high sulfur fuel oil (35, 55, 59).

6. A fuel of Claim 1 comprising substantially the entire range of crude oil derived hydrocarbons from C3 or C5 to greater than C20, with limits of lowest and highest boiling point range being that of light tight oil and of soluble hydroconverted oils so combined therein.