CLAIMS

1. Integrated process to convert crude oil into petrochemical products comprising crude oil distillation, aromatic ring opening and olefins synthesis, which process comprises subjecting a hydrocarbon feed to aromatic ring opening to produce LPG and subjecting the LPG produced in the integrated process to olefins synthesis,

wherein said hydrocarbon feed comprises:

kerosene and/or gasoil produced by crude oil distillation in the process; and

refinery unit-derived middle-distillate produced in the process, which process comprises:

(a) subjecting crude oil to crude oil distillation to produce gases fraction, resid and one or more of kerosene and gasoil;

(b) subjecting resid to resid upgrading to produce LPG and a liquid resid upgrading effluent;

(c) subjecting liquid resid upgrading effluent and one or more selected from the group consisting of kerosene and gasoil to aromatic ring opening to produce LPG; and

(d) subjecting LPG produced in the integrated process to olefins synthesis, wherein the olefins synthesis comprises pyrolysis of ethane and dehydrogenation of propane.

2. The process according to claim 1, wherein the resid upgrading is resid hydrocracking.

3. The process according to any one of claims 1-2, wherein at least 50 wt-% of the combined kerosene and gasoil produced by the crude oil distillation in the process is subjected to aromatic ring opening.

4. The process according to any one of claims 1-3, wherein the olefins synthesis comprises pyrolysis of butane.

5. The process according to any one of claims 2-4 further comprising subjecting part of the liquid resid upgrading effluent, and optionally light-distillate produced by aromatic ring opening, to fluid catalytic cracking to produce light-distillate, middle-distillate and olefins, and subjecting said middle-distillate produced by fluid catalytic cracking to aromatic ring opening.

6. Process installation to convert crude oil into petrochemical products comprising

a crude distillation unit (10) comprising an inlet for crude oil (100) and at least one outlet for kerosene and/or gasoil (310);

an aromatic ring opening unit (26) comprising an inlet for a hydrocarbon feed to aromatic ring opening (302) and an outlet for LPG (222); and

a unit for olefins synthesis (30) comprising an inlet for LPG produced by the integrated petrochemical process installation (200) and an outlet for olefins (500),

wherein said hydrocarbon feed to aromatic ring opening comprises:

kerosene and/or gasoil produced by the crude oil distillation unit (10); and

refinery unit-derived middle-distillate produced by the integrated petrochemical process installation, wherein:

the crude distillation unit (10) comprises an outlet for gases fraction (230), an outlet for resid (400) and at least one outlet for kerosene and/or and gasoil (310); and

a resid upgrading unit (40) comprising an inlet for resid (400) and refinery unit-derived heavy-distillate (401), an outlet for LPG produced by resid upgrading (223) and outlet for liquid resid upgrading effluent (326), further comprising

a gas separation unit (50) comprising an inlet for gases produced in the integrated process (200), an outlet for ethane (240) and an outlet for propane (250);

an ethane cracker (31) comprising an inlet for ethane (240) and an outlet for ethylene (510); and

a propane dehydrogenation unit (32) comprising an inlet for propane (250) and an outlet for propylene (520).

7. The process installation according to claim 6, further comprising

a fluid catalytic cracking unit (60) comprising an inlet for a part of the liquid resid upgrading effluent (326) and optionally light-distillate produced by aromatic ring opening (328) and an outlet for middle-distillate produced by fluid catalytic cracking (324) and olefins produced by fluid catalytic cracking (540).

8. The process installation according to any one of claims 6-7 further comprising

a butane cracker (34) comprising an inlet for butane (260) and an outlet for olefins (530) and an outlet for BTX (600).