CLAIMS:

1. A process for upgrading paraffins and olefins, the process comprising:

(i) contacting a first feed comprising C_{14-} olefins with an oligomerization catalyst in a first reaction zone under conditions effective for oligomerization of olefins to higher molecular weight hydrocarbons;

(ii) removing deactivated catalyst from the first reaction zone at a first temperature;

(iii) contacting the deactivated catalyst with an oxygen-containing gas and with a hydrocarbon-containing fuel in a regeneration zone to regenerate the catalyst and raise the temperature of the catalyst to a second, higher temperature;

(iv) contacting a second feed comprising C_{14-} paraffins with the regenerated catalyst in a second reaction zone to convert at least some of the paraffins in the second feed to a reaction effluent comprising olefins, aromatic hydrocarbons and regenerated catalyst;

(v) supplying the reaction effluent to the first reaction zone; and

(vi) withdrawing a product stream from the first reaction zone; wherein the product stream contains at least 30 weight % less benzene than the reaction effluent.

2. The process of claim 1 wherein the first reaction zone comprises a fluidized catalyst bed or a riser reactor.

3. The process of claim 1, wherein the second reaction zone comprises a transfer line for supplying the second feed to the first reaction zone.

4. The process of claim 1, in which the contacting (i) is performed at a temperature from 600 to 900°F (316 to 482°C).

5. The process of claim 1, in which the contacting (i) is performed at a pressure of from 20-400 psig (240 to 2860 kPa-a).

6. The process of claim 1, in which the contacting (iii) is performed at a temperature from 1200 to 1450°F (648 to 788°C).

7. The process of claim 1, in which the contacting (iv) is performed at a temperature from 950-1250ºF (510 to 677ºC).

8. The process of claim 1, in which the oligomerization catalyst comprises a molecular sieve.

9. The process of claim 1, in which the oligomerization catalyst comprises a molecular sieve having a Constraint Index of 1 to 12.

10. The process of claim 1, in which the first feed comprises FCC fuel gas and the second feed comprises C_3 to C_5 paraffins.

11. The process of claim 1, in which the contacting (i) also effects alkylation of aromatics in the reaction effluent with olefins in the first feed and/or olefins in the reaction effluent.

12. The process of claim 1, in which the product stream comprises gasoline and/or distillate boiling range hydrocarbons.

13. The process of claim 1, in which the fuel comprises one or both of liquid petroleum gas (LPG) or C_{2-} hydrocarbon gas recovered from a product stream withdrawn from the first reaction zone.

14. The process of claim 1, in which the weight ratio of the amount of C_{14-} olefins in the first feed to the amount of C_{14-} paraffins in the second feed is at least 1:1.