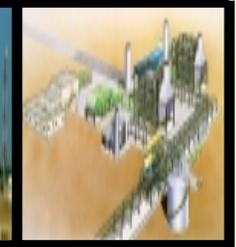




Stand-Alone Compact Refinery



JUST[®] REFINERY



JGC Unitized Smart Tailored Refinery



New Refinery Concept

JUST[®] REFINERY CONCEPT

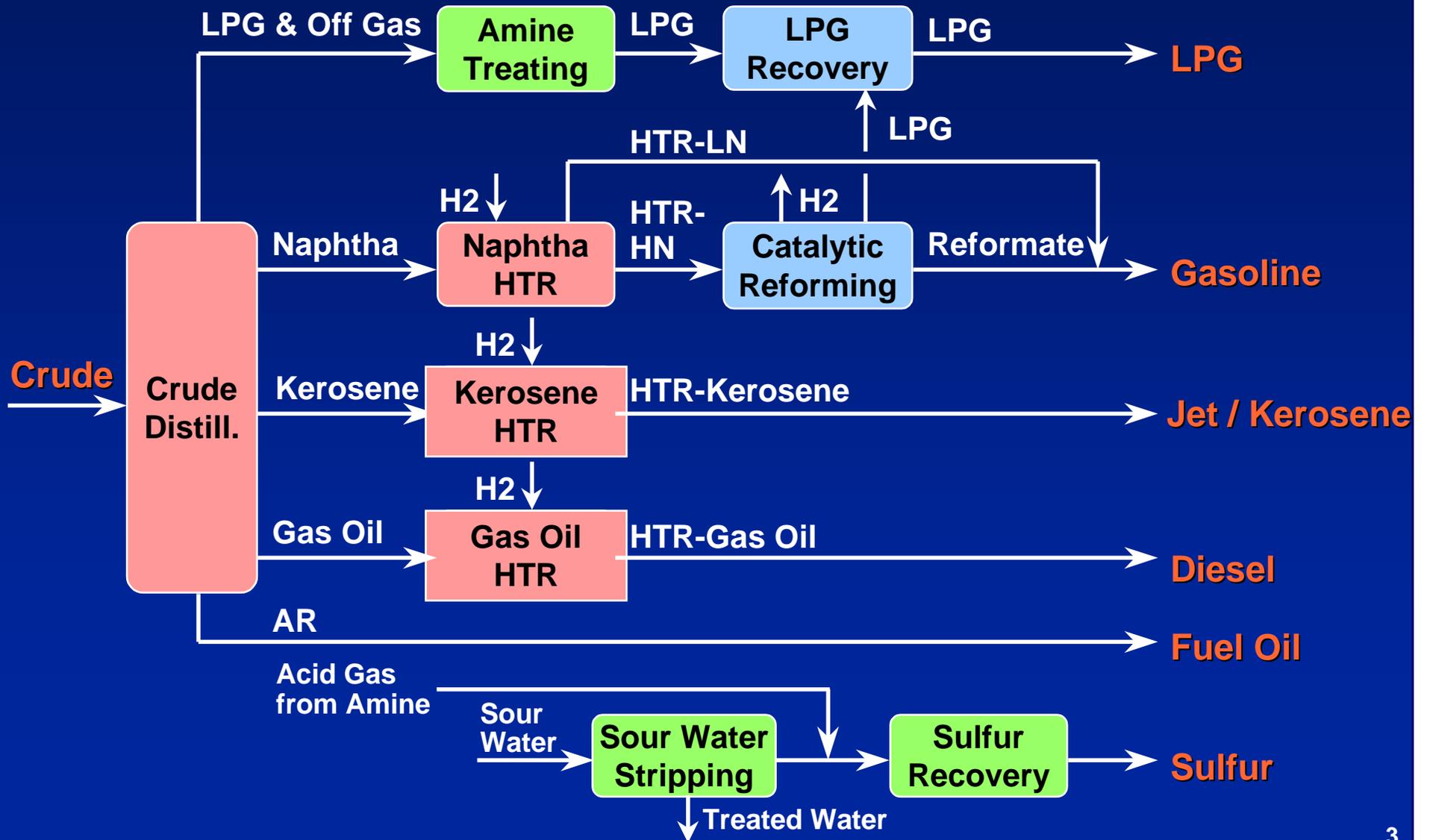
- ◆ Economized Small to Medium Scale Stand-Alone Compact Refinery
- ◆ Significant Saving of Initial Capital Expenditure with New Design Concept
- ◆ Shorter EPC Schedule with Concept of Packaged Refinery



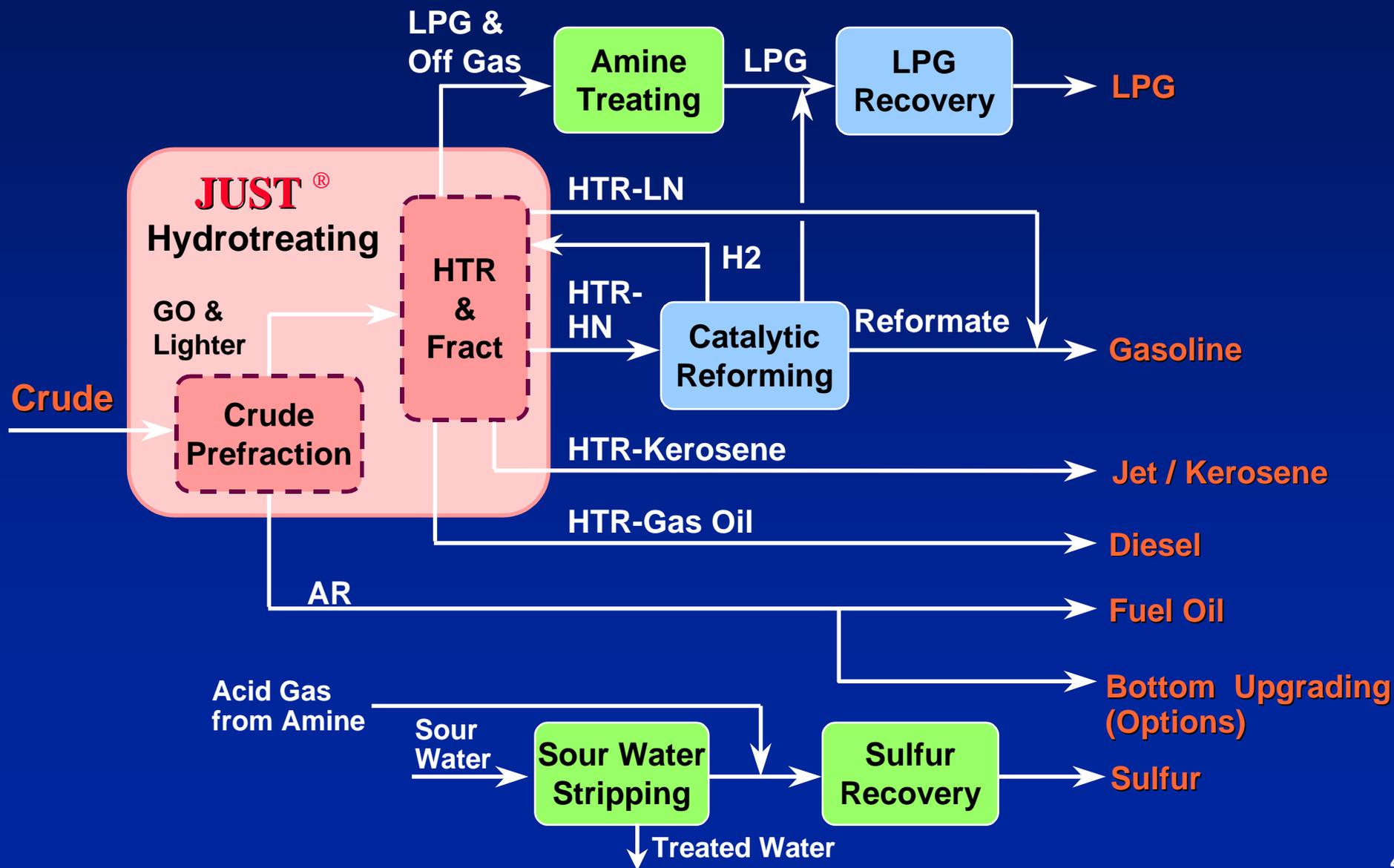
JUST[®] REFINERY
Competitive against A Large One !!

1. **Simplified Integrated Process Flow Scheme**
→ **Reducing Number of Process Units**
2. **Co-Generation Utility System**
→ **Energy Saving**
3. **Advanced Offsite Design**
→ **Saving Storage Tanks**
4. **Integrated Plant Layout**
→ **Compact Plot Plan**
5. **Standardized Process Design**
→ **Shortening Engineering Schedule**

CONVENTIONAL PROCESS SCHEME



JUST[®] REFINERY PROCESS SCHEME



JUST[®] REFINERY HIGHLIGHTS

(Capacity : 50,000 BPSD)

| | <u>Conventional Scheme</u> | <u>JUST[®] Scheme</u> |
|--|----------------------------|--------------------------------|
| ◆ Process | | |
| ■ Number of Process Units | 9 | 6 |
| ■ Number of Major Equipment Items in HTR | 12 | 4 |
| ◆ Utility | | |
| ■ Power & Steam System | STG / Boiler | GTG / HRSG |
| ■ Surface Condenser | Yes | No |
| ■ Independent Air Compressor | Yes | No |
| ◆ Offsite (Number of Tanks) | 28 | 13 |
| ◆ Initial CAPEX | Base | - 28 % |
| ◆ Area Requirement | Base | - 34 % |
| ◆ Project Schedule (Month) | 35 | 26 |

JUST[®] REFINERY ECONOMICS

◆ **Basis : ARL Crude / 50,000 BPSD**

| | <u>Conventional</u> | <u>JUST[®]</u> |
|------------------------|---------------------|-------------------------|
| ■ NPV @ 10% | Base | + 90 MMUS\$ |
| ■ IRR | Base | + 5 % |
| ■ Simple Payout Period | Base | - 2.5 Years |