

A 3D architectural rendering of a refinery or chemical plant, showing various towers, pipes, and walkways. A semi-transparent blue banner is overlaid across the center of the image.

BE FUTURE FORWARD

刘茂树

霍尼韦尔UOP中国区副总裁兼总经理

霍尼韦尔UOP未来炼厂

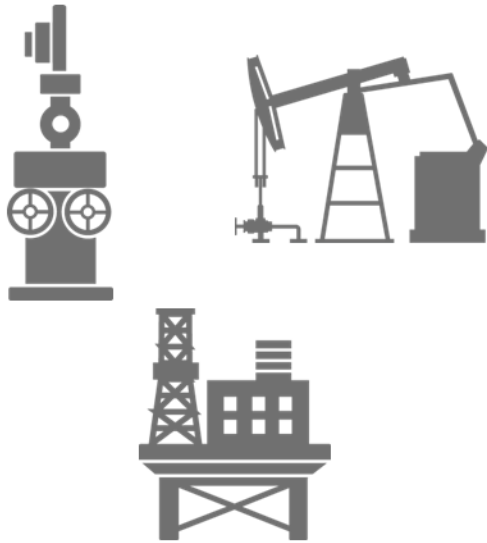
引领全球石化市场转型

Honeywell
Uop

霍尼韦尔 UOP 服务于能源供应链

上游产业

原油、天然气的勘探，开采及生产



为井口处理及硫、凝液的回收
提供技术和材料

中游产业

加工、储存及运输



为天然气处理及石化产品生产
提供技术和材料

下游产业

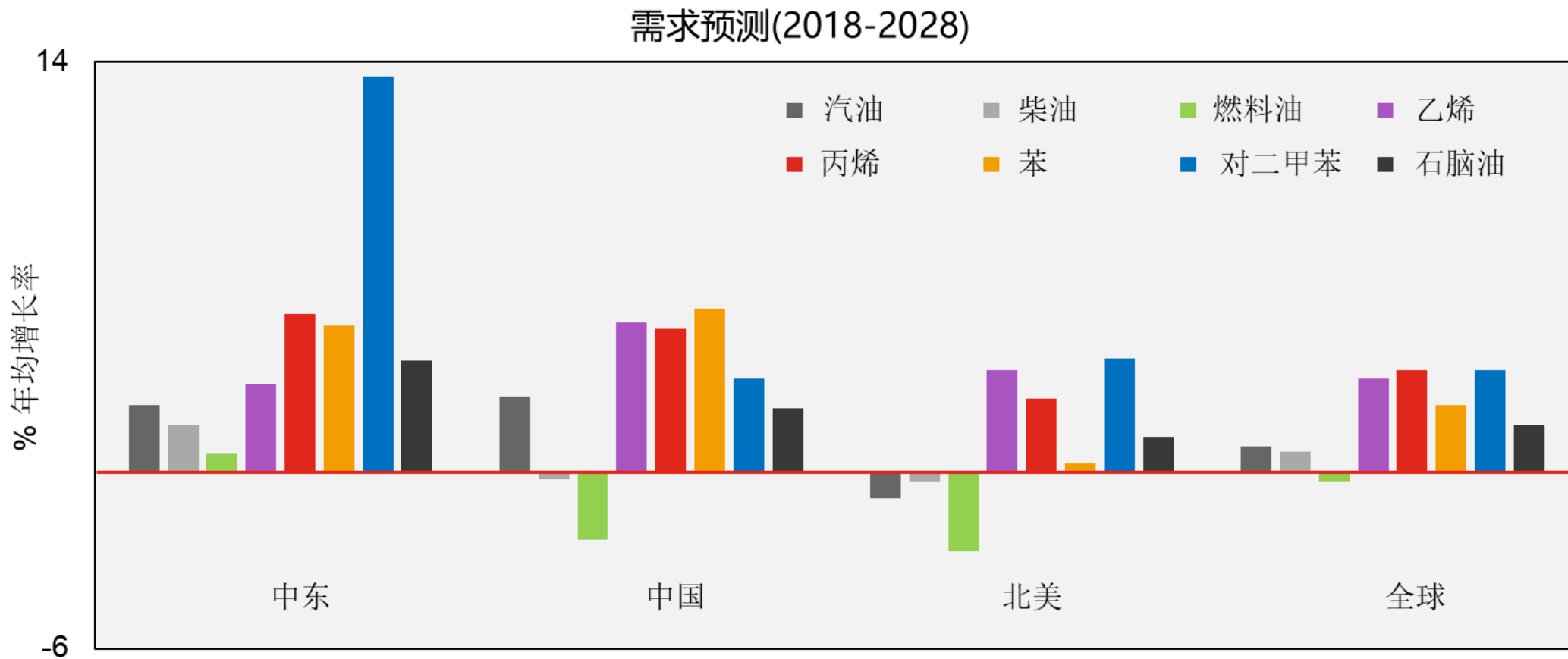
将石油、天然气及生物质精炼成
燃料和化学品



提供工艺技术、设备、材料、服务
以及智慧工厂架构

当今广泛使用的 **36** 项炼油工艺技术中的 **31** 项由UOP发明

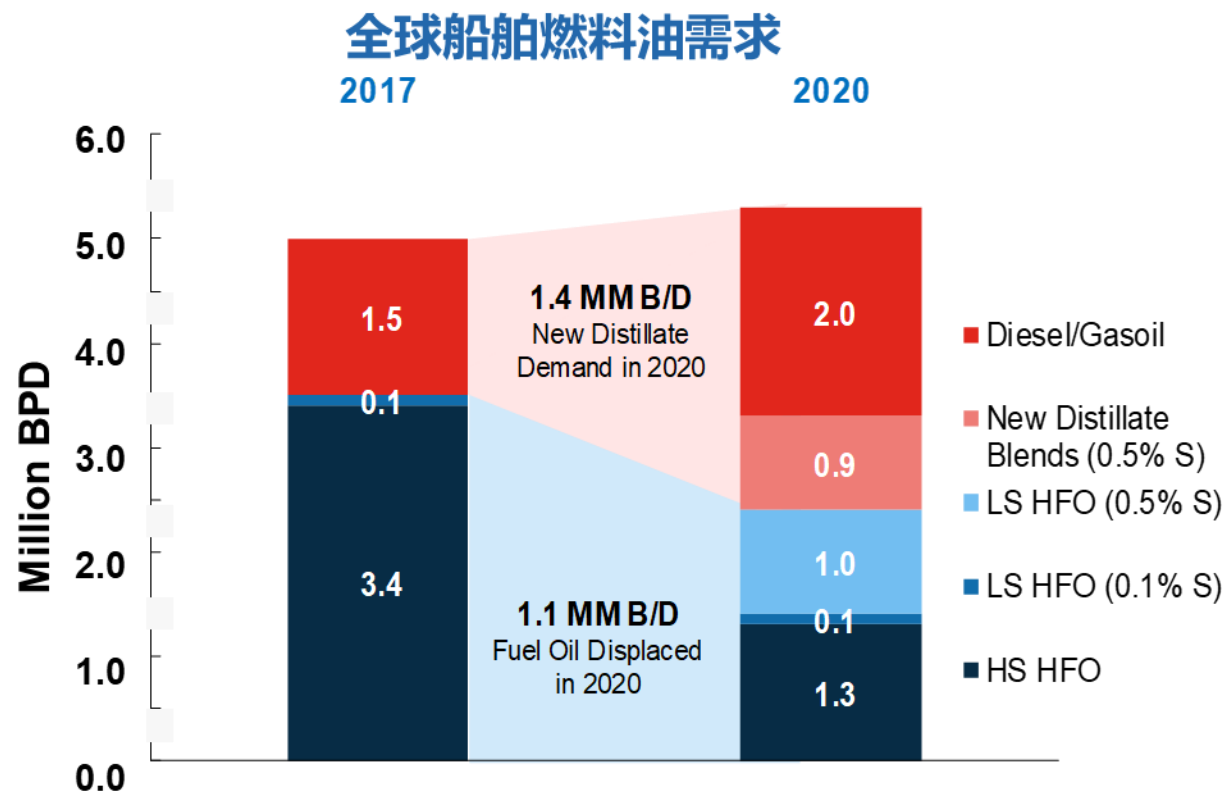
全球产品需求正从油品转向石化产品



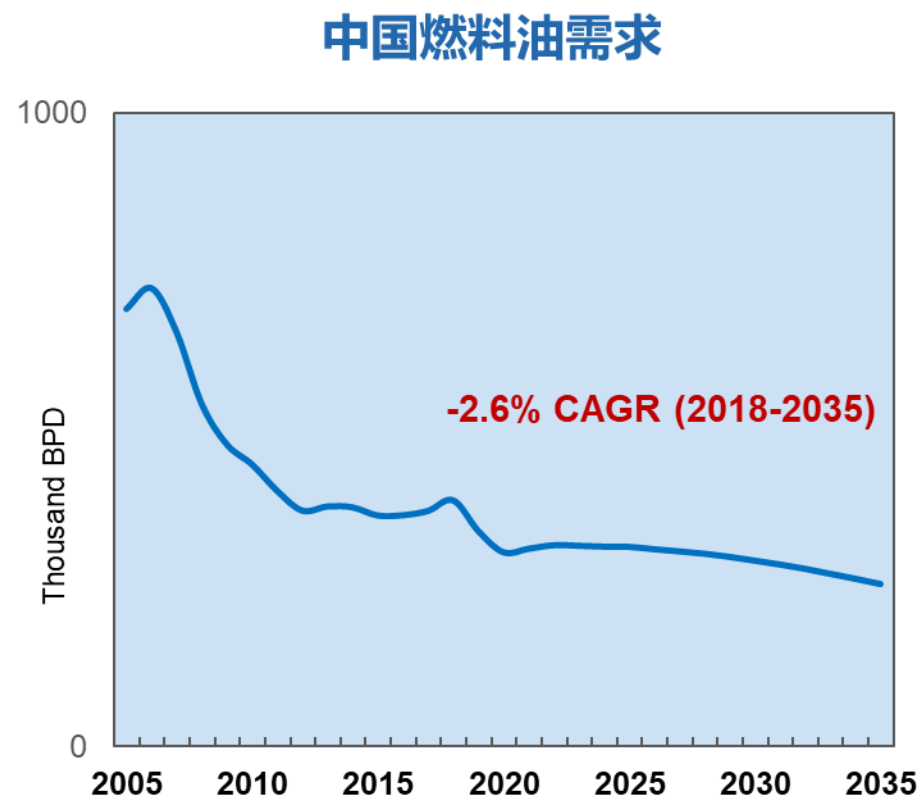
Source: IHS Markit

全球的炼厂正在由燃料油转向石化产品生产

燃料需求趋减，激发对渣油转化的关注



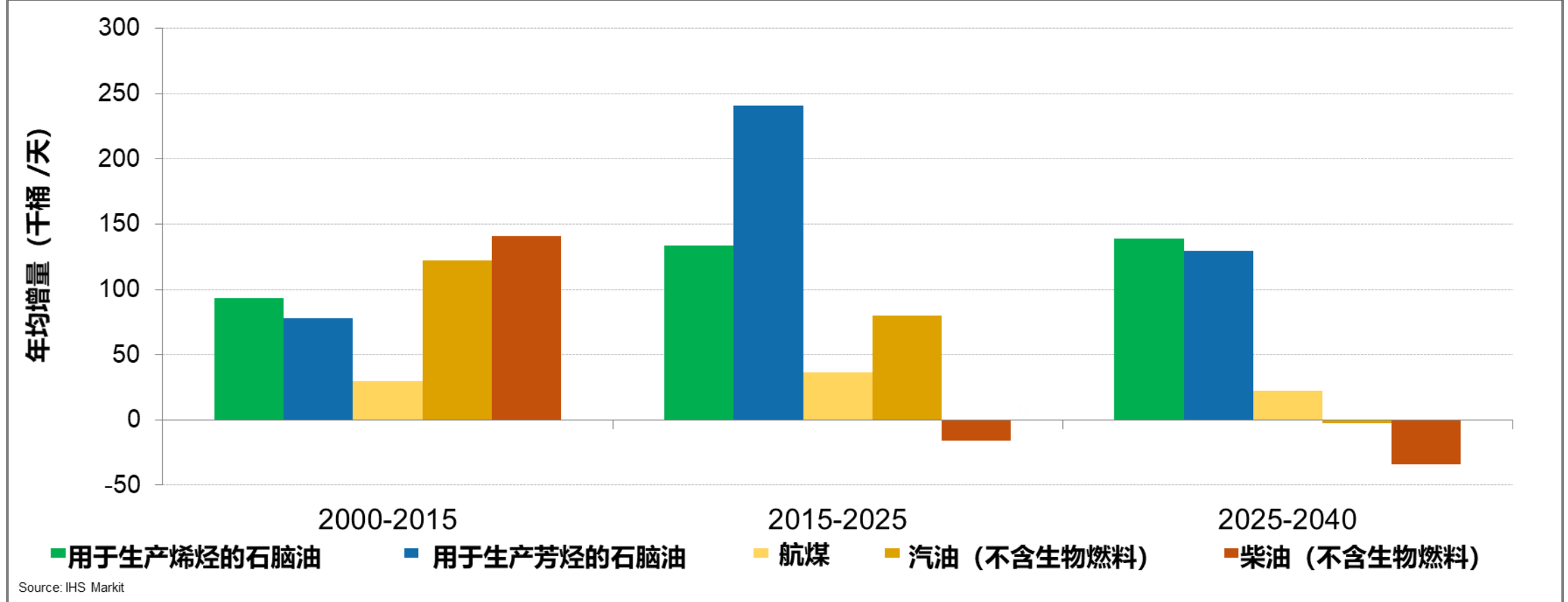
Source: IHS Markit



燃料油需求下降，是转化为柴油还是转化为化工产品？

中国炼厂亟待转型

中国成品油与化工品原料走势



展望未来，中国的炼厂将转型成主要为化工品提供原料

传统的出口市场成为本地化投资的热点

中国东部沿海地区规划建设大型炼化一体化项目

IHS Headline Analysis

The \$15-billion complex is to be built in Zhoushan with a 400,000-bbl/day refinery and a 1.4-million mt/year ethylene plant.

大连大型石化项目开工建设

By Zhang Xiaomin(chinadaily.com.cn)

A refining-chemical integration project began construction on Wednesday near the world's biggest purified terephthalic acid (PTA) production base at Dalian Changxing Island Economic Zone.

发改委核准河北大型炼油项目

NDRC approved a refinery project owned by private company Risun. The new refinery, near the port of Caofeidian in Hebei province, which is located in northeastern China, can process 15 million tonnes of crude per year, the Hebei NDRC said. That is about 300,000 barrels per day.

山东裕龙岛的千亿级项目即将落地！ 南山集团占股71%

Nanshan Group will lead the Yantai-based Yulong refining and chemical project, the largest refining and chemical project in Shandong. Based on the government-set ratio of new refining capacity to old capacity to be removed, which stands at 1:1, the new refining capacity comes on

盛虹将投资714亿元建设炼化一体化项目

Source: ICIS News

The complex, which will be owned by its subsidiary called Shenghong Refining and Chemical (Lianyungang) Co, will include a 16m tonnes/year (320,000 bbl/day) refinery, 1.1m tonne/year of ethylene and 2.8m tonne/year of para-xylene capacities, according to a company document.

桐昆集团将投资70亿美元建设大型芳烃 一体化产业基地

Aug 27 -- Zhejiang Tongkun Holding Group (Tongkun, China) signed an agreement in late August with the municipal government of Qinzhou, China, for an investment of 51 billion renminbi (\$7.1 billion) to integrated petrochemical complex that will have a xylene (p-xylene) capacity of 2.8 million metric ton (MMt/y) and a purified terephthalic acid (PTA) capacity of 5 MMt/y on the Beibu Gulf at Qinzhou.

中国地方炼厂成立合资公司 总资产达50亿美元

BEIJING (Reuters) - A group of six Chinese independent oil refiners set up a 33 billion yuan (\$5 billion) joint venture to compete with state-owned giants and the rise of private chemical giants,

广东省大型炼化项目开工建设

By Zheng Xin | chinadaily.com.cn

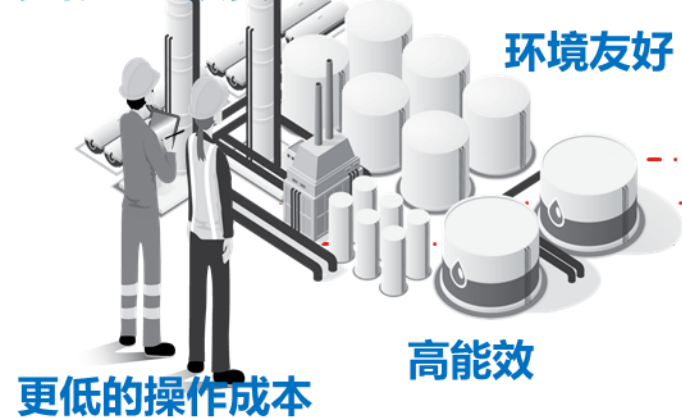
Construction of the 20 MMTA refinery, 1.2 MMTA steam ethylene cracking complex plant and one 2600 KMTA PX complex, in southern China by CNPC and Venezuela's PDVSA, kicked off.

投资石化产品进而获得更高的投资回报

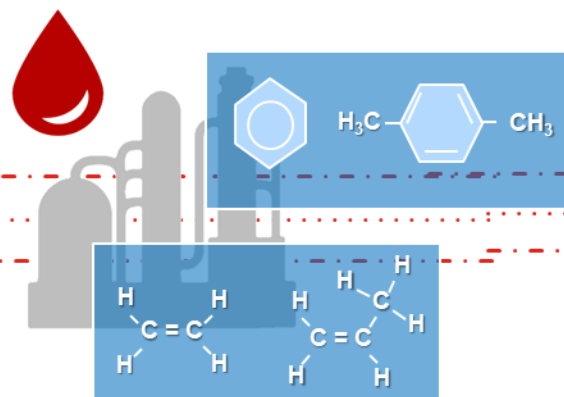
中国引领全球产业转型.....

高度一体化整合

更低的总投资



原油制化学品



互联及智能制造

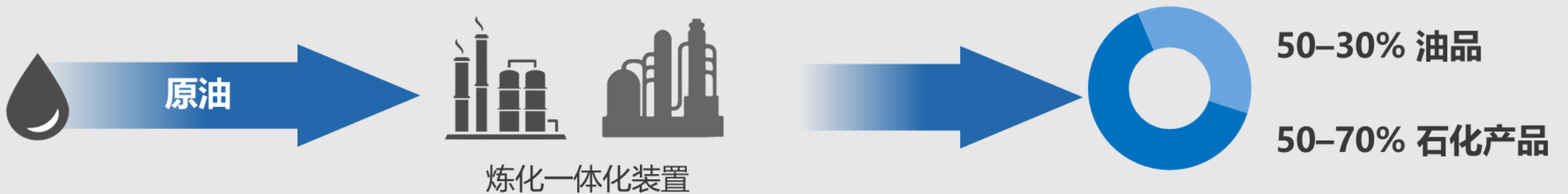


霍尼韦尔UOP未来炼厂

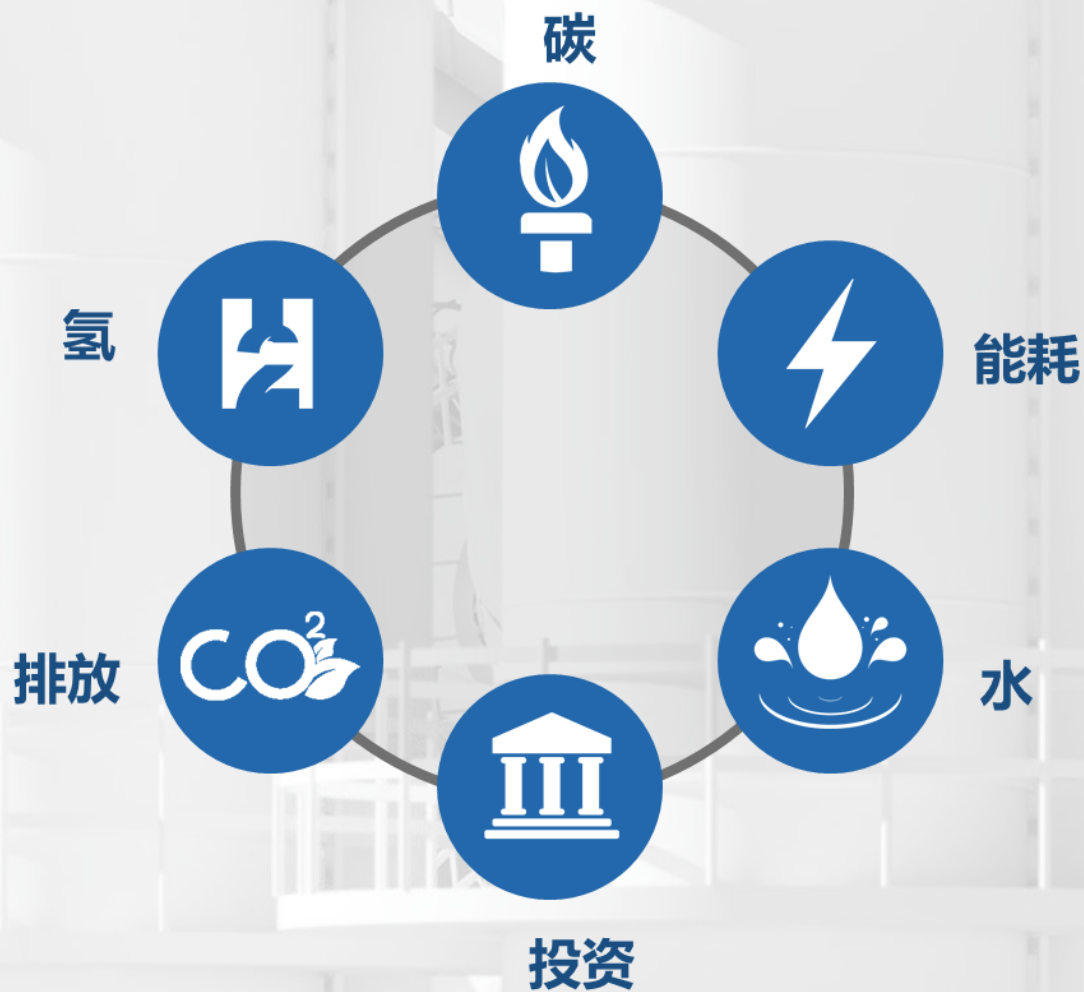
传统原油处理路线: 炼油



炼化一体化



构建未来炼厂的六大效率指标



- **碳** - 有效利用碳分子, 从产石油焦/沥青变为生产芳烃
- **氢** - 平衡氢耗, 提升氢气利用
- **能耗** - 将单位产量的能耗降到最低
- **排放** - 更低的排放
- **水** - 将所有来源的水消耗量将至最低
- **投资** - 衡量投资效率的两个指标
 1. 内部收益率(IRR)
 2. 债务偿还能力比率 (DCR)

未来的炼厂将是这样的...



灵活高效

满足快速变化的产品市场需求

- 低成本高灵活度
- 减少残渣
- 提高油品规格

GB-VI国六标准已推行



炼化整合

获取更高的利润和价值

- 采用分子管理理念生产油品和基础化工原料
- 获取进一步价值



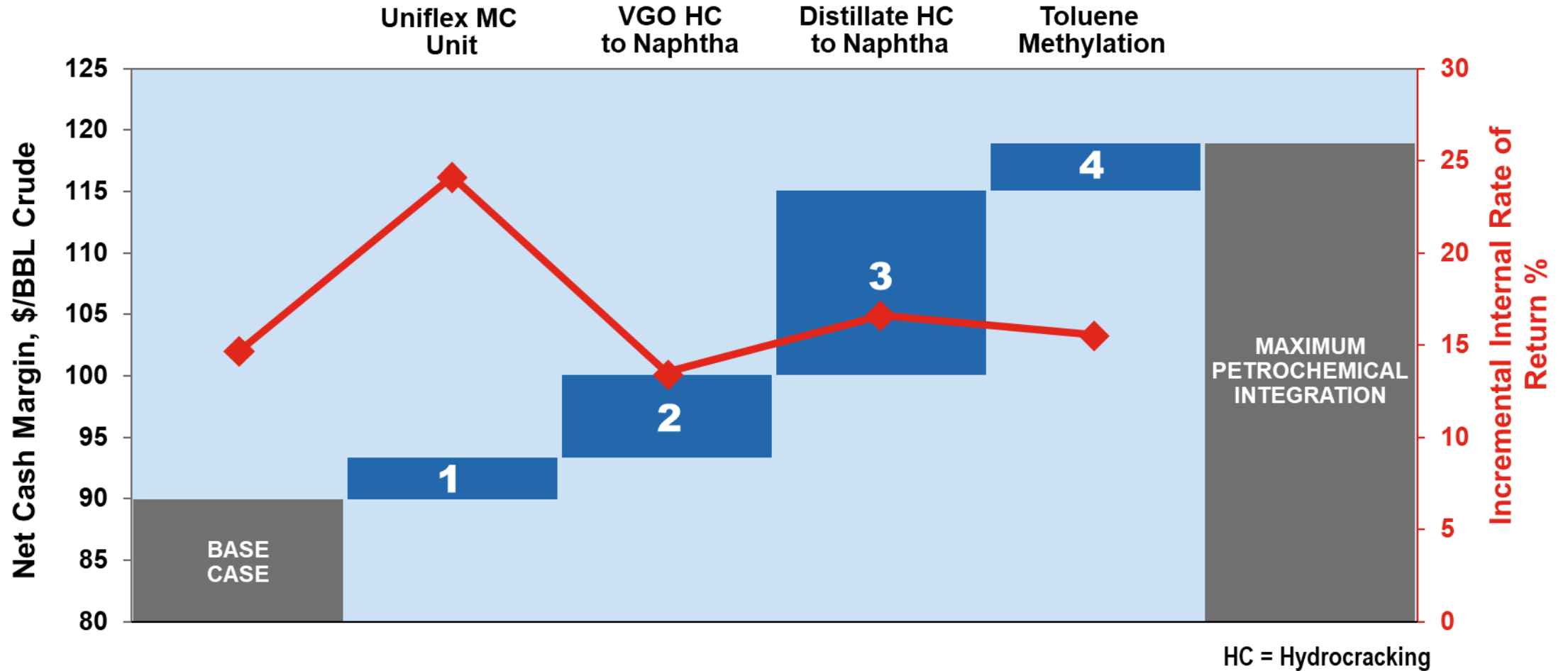
互联智能

每天获得更优的操作性能

- 实时的专业咨询
- 维护一支拥有熟练技能和强大执行力的队伍

适应未来市场需求 从每一个分子中获取最大化价值

通过一体化整合逐步提高石化装置的经济效益



有机会将现金净利润提升30美元/桶

霍尼韦尔互联工厂



设备互联， 人员互联， 工艺互联

结论

炼化整合

正成为世界规模的炼油项目投资的首要考虑因素

未来炼厂

只生产石化产品已经成为可能

分子管理

优化流程, 采用先进技术将使价值最大化

现有资产

可以通过重新调整定位生产高品位的烯烃和芳烃

技术革新

将聚焦于工艺强化, 重组分升级, 投入少收益高

Q&A