GAS-TO-LIQUIDS IN SHELL
THE JOURNEY CONTINUES

KIVI lecture, 7th October 2015

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DEFINITIONS AND CAUTIONARY NOTE

Reserves: Our use of the term "reserves" in this presentation means SEC proved oil and gas reserves.

Resources: Our use of the term "resources" in this presentation includes quantities of oil and gas not yet classified as SEC proved oil and gas reserves. Resources are consistent with the Society of Petroleum Engineers 2P and 2C definitions.

Organic: Our use of the term Organic includes SEC proved oil and gas reserves excluding changes resulting from acquisitions, divestments and year-average pricing impact.
Resources plays: Our use of the term 'resources plays' refers to tight, shale and coal bed methane oil and gas acreage.

The companies in which Royal Dutch Shell plc directly and indirectly owns investments are separate entities. In this presentation "Shell", "Shell group" and "Royal Dutch Shell" are sometimes used for convenience where references are made to Royal Dutch Shell plc and its subsidiaries in general. Likewise, the words "we", "us" and "our" are also used to refer to subsidiaries in general or to those who work for them. These expressions are also used where no useful purpose is served by identifying the particular company or companies. ''Subsidiaries'', "Shell subsidiaries" and "Shell companies" as used in this presentation refer to companies in which Royal Dutch Shell either directly or indirectly has control. Companies over which Shell has joint control are generally referred to as "joint ventures" and companies over which Shell has significant influence but neither control nor joint control are referred to as "associates". The term "Shell interest" is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in a venture, partnership or company, after exclusion of all third-party interest.

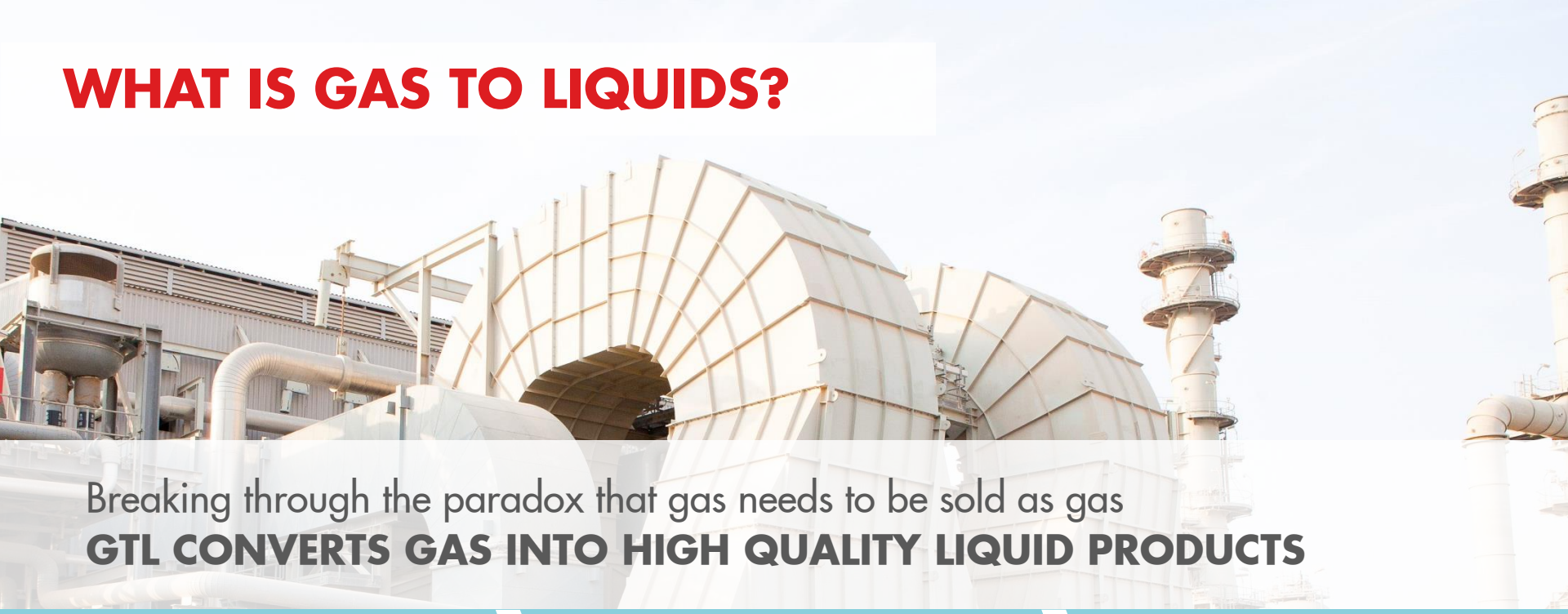
This presentation contains forward-looking statements concerning the financial condition, results of operations and businesses of Royal Dutch Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management's current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Royal Dutch Shell to market risks and statements expressing management's expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as ''anticipate'', ''believe'', ''could'', ''estimate'', ''expect'', ''intend'', ''may'', ''plan'', ''objectives'', ''outlook'', ''probably'', ''project'', ''will'', ''seek'', ''target'', ''risks'', ''goals'', ''should'' and similar terms and phrases. There are a number of factors that could affect the future operations of Royal Dutch Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this presentation, including (without limitation): (a) price fluctuations in crude oil and natural gas; (b) changes in demand for Shell's products; (c) currency fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) risks associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions; (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, fiscal and regulatory developments including potential litigation and regulatory measures as a result of climate changes; (k) economic and financial market conditions in various countries and regions; (l) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, delays or advancements in the approval of projects and delays in the reimbursement for shared costs; and (m) changes in trading conditions. All forward-looking statements contained in this presentation are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Additional factors that may affect future results are contained in Royal Dutch Shell's 20-F for the year ended 31 December, 2014 (available at www.shell.com/investor and www.sec.gov). These factors also should be considered by the reader. Each forward-looking statement speaks only as of the date of this presentation, 7 October, 2015.

Neither Royal Dutch Shell nor any of its subsidiaries undertake any obligation to publicly update or revise any forward-looking statement as a result of new information, future events or other information. In light of these risks, results could differ materially from those stated, implied or inferred from the forward-looking statements contained in this presentation. There can be no assurance that dividend payments will match or exceed those set out in this presentation in the future, or that they will be made at all.

We use certain terms in this presentation, such as discovery potential, that the United States Securities and Exchange Commission (SEC) guidelines strictly prohibit us from including in filings with the SEC. U.S. Investors are urged to consider closely the disclosure in our Form 20-F, File No 1-32575, available on the SEC website www.sec.gov. You can also obtain this form from the SEC by calling 1-800-SEC-0330.

INTRO SLIDES

WHAT IS GAS TO LIQUIDS?



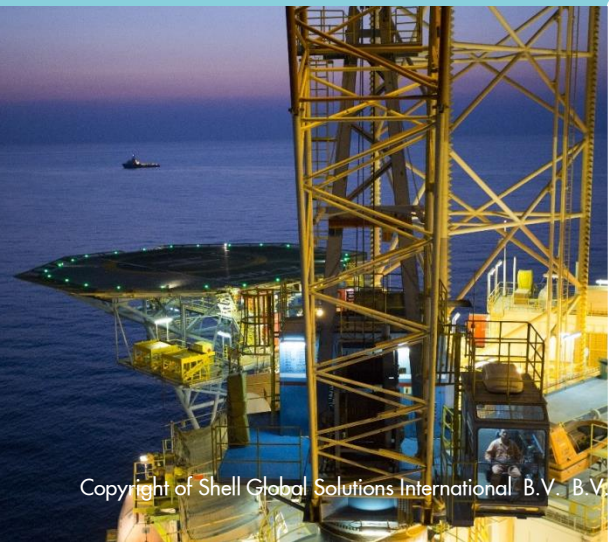
Breaking through the paradox that gas needs to be sold as gas

GTL CONVERTS GAS INTO HIGH QUALITY LIQUID PRODUCTS

Natural gas

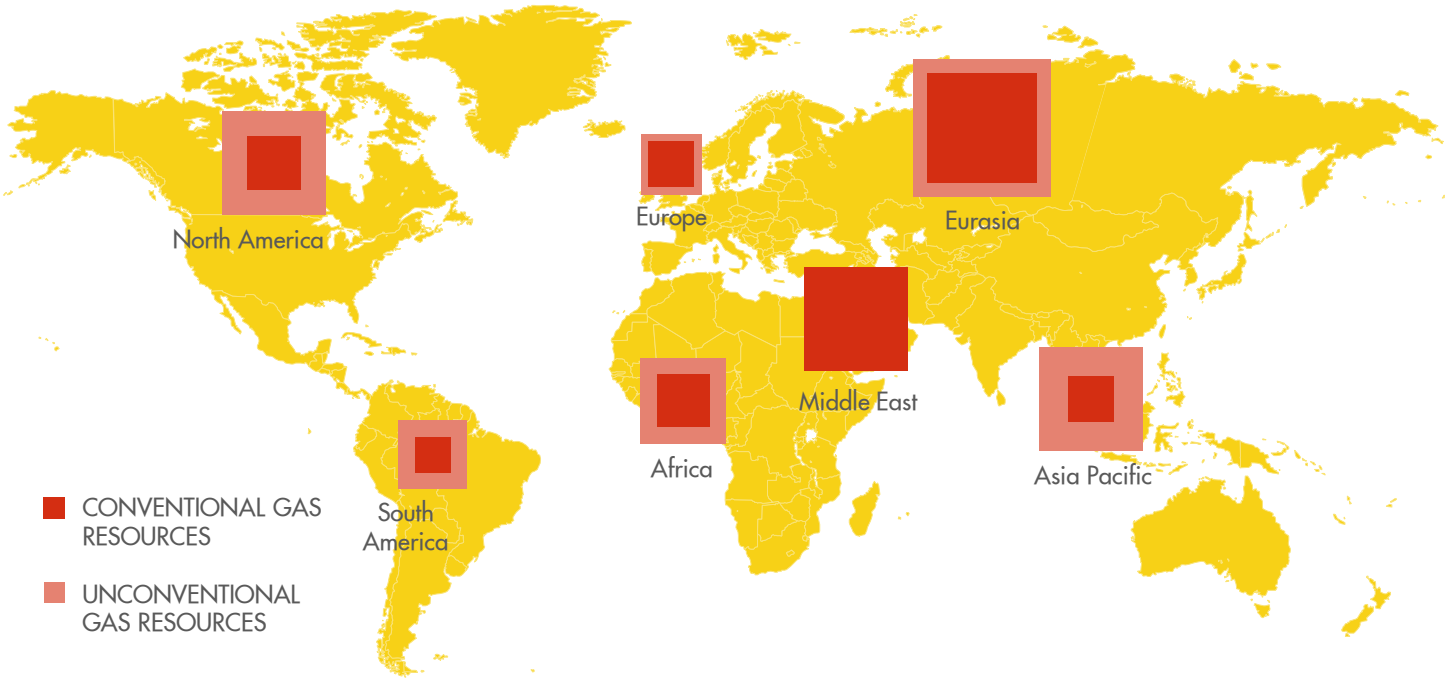
GTL plants process natural gas using Fischer-Tropsch process

Products include transport fuels, lubricants, waxes and chemicals



ABUNDANT: HUGE GLOBAL GAS RESOURCES

GAS RESOURCES ARE PLENTIFUL, GROWING AND GEOGRAPHICALLY DIVERSE



- Conventional and unconventional recoverable gas resources can supply >230 years of current global gas production
- Unconventional gas is transforming the global gas market

	REMAINING RECOVERABLE RESOURCES (TCM)	EQUIVALENT IN YEARS OF CURRENT PRODUCTION
Conventional	404.5	130
Unconventional	380.5	123
Total	**785**	**253**

Source: IEA World Energy Outlook, WoodMackenzie, Shell Interpretation

GAS-TO-LIQUIDS

A 40-YEAR JOURNEY OF TECHNOLOGY AND PRODUCT INNOVATION

1973

LABORATORY
AMSTERDAM

1983

PILOT PLANT
AMSTERDAM

1993

SHELL MDS,
BINTULU MALAYSIA

TODAY

PEARL GTL QATAR

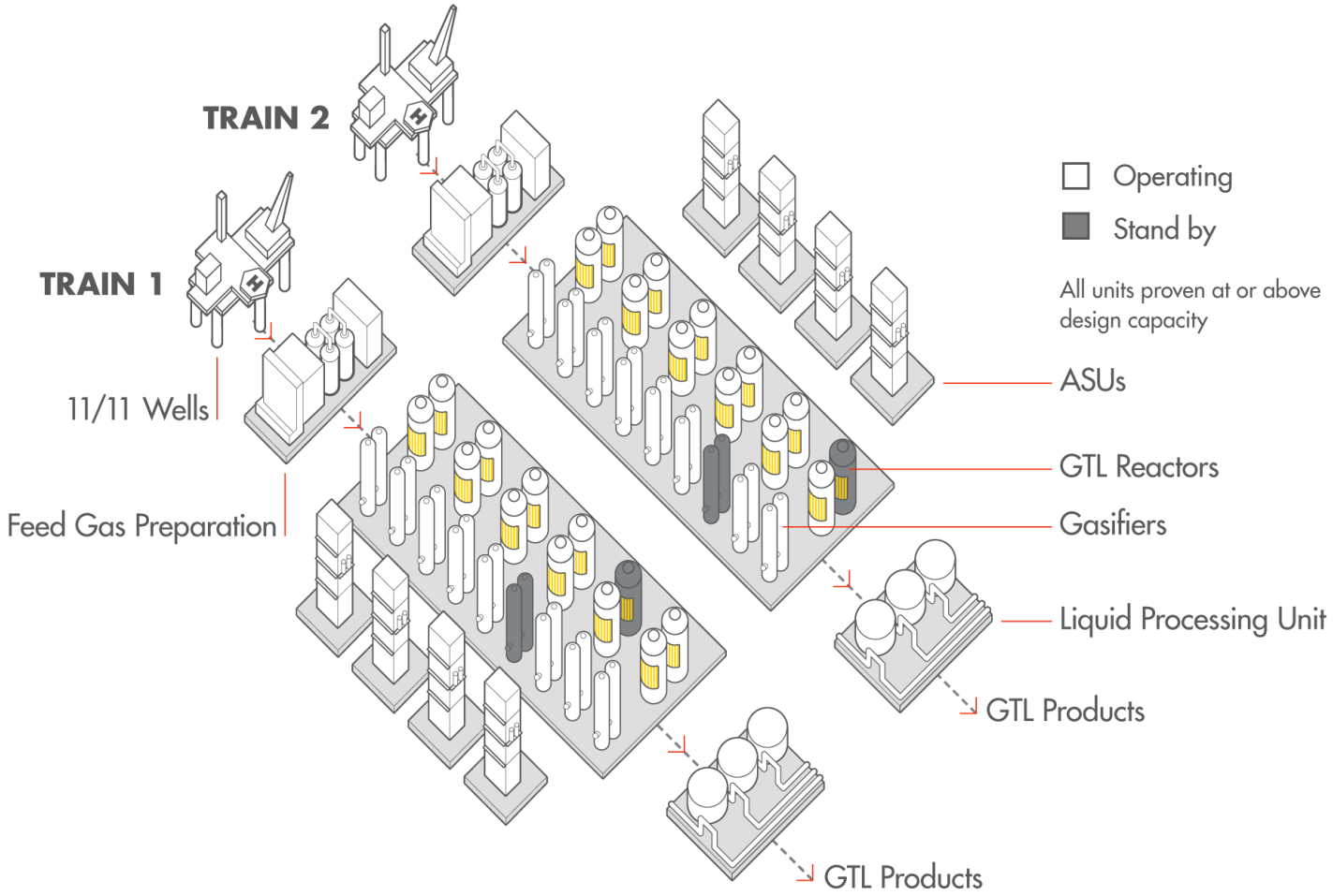
SHELL MDS

FIRST COMMERCIAL FACILITY IN THE WORLD

- Location: Bintulu, Malaysia
- Plant capacity 14,700 b/d of liquid products & waxes
- More than 400 staff
- Customers in more than 50 countries
- More than 2200 shipments
- 82% Asia, Japan 6%, EU 8%, US 4%

THE PEARL GTL PROJECT

PEARL GTL: FULLY INTEGRATED PLANT



DESIGN CAPACITY: 1.6 BCF/D OF WET GAS
120 KBBL/D NGLS/ETHANE
140 KBBL/D GTL PRODUCTS

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PEARL GTL

A MAJOR ENGINEERING FEAT

IMPORTED MATERIAL:
2 MLN+
FREIGHT TONNES

CONCRETE:
750,000 M^3
8 WEMBLEY STADIUMS OR 2 BURJ KHALIFAS

STEEL: ERECTED
2.5 EIFFEL TOWERS/MONTH
IN PIPE & STRUCTURAL STEEL AT PEAK

GTL SYNTHESIS REACTOR TUBES:
END TO END WOULD STRETCH
FROM **DOHA** TO **TOKYO**

CABLES:
13,000 KM
FROM DOHA TO HOUSTON

EQUIPMENT:
1.2 GIGAWATT
OF ROTATING EQUIPMENT

WATER CLEANED:
45,000 M^3 PER DAY
EQUAL TO A TOWN
OF 140,000 PEOPLE

STEAM FOR POWERGEN:
8,000 TONNES PER HOUR
3 OLYMPIC SIZE SWIMMING POOLS/HOUR

OXYGEN FOR GTL:
28,000
TONNES PER DAY PRODUCED

CATALYSTS:
SURFACE AREA EQUIVALENT
>10X SURFACE AREA OF QATAR

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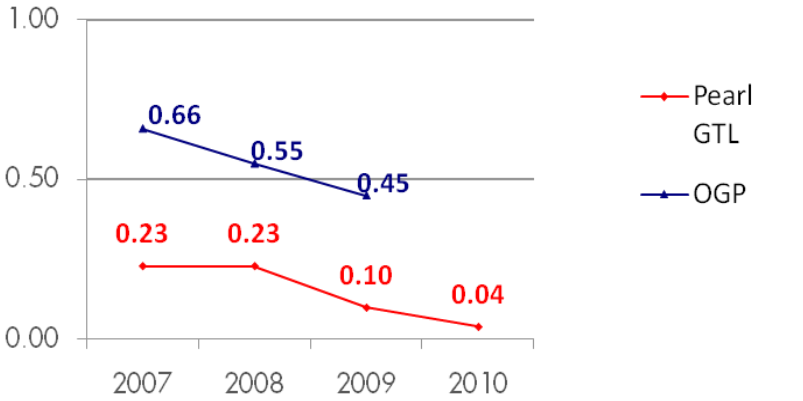
PEARL GTL HSSE PERFORMANCE

COMPLEX PROJECT - 10 TIMES LOWER LTI THAN INDUSTRY AVERAGE

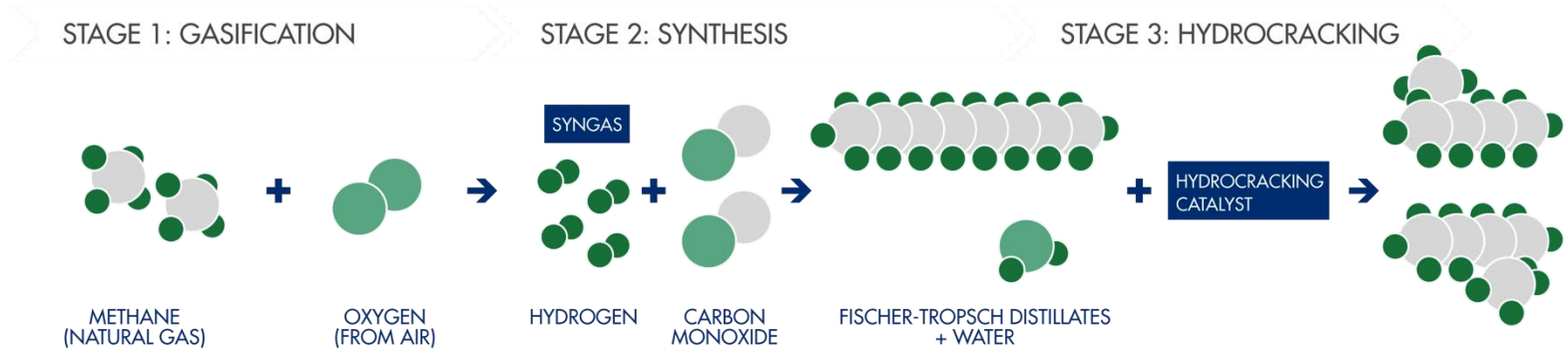
- Large workforce - at peak circa 52,000
- Pearl Village community established
- In 2010 LTIF< 0.04/mln hrs
- Shell Record – Onshore – 77 million hours LTI free
- 270 million km driven without serious accident

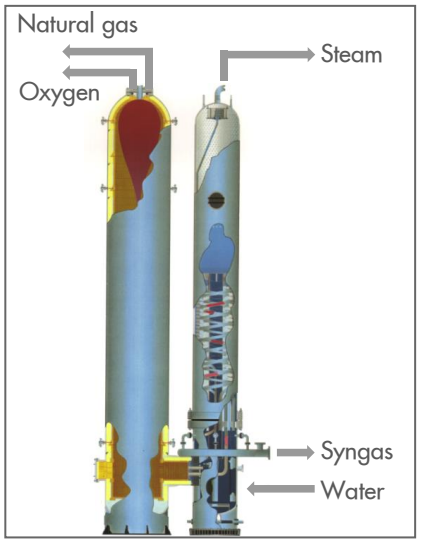
PM congratulates CCC Safety Manager on achieving 75 million hours without LTI



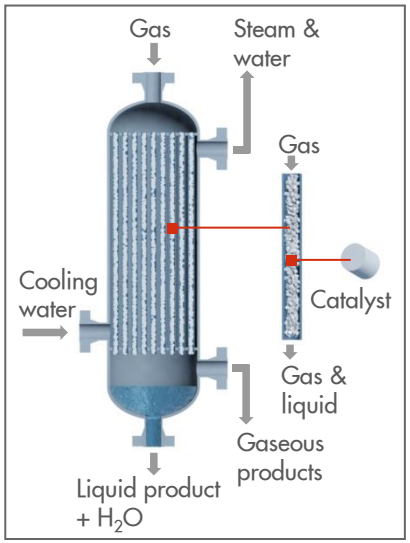
Recognition is one of the most powerful motivational tools at Pearl GTL

SHELL GTL TECHNOLOGY FUNDAMENTALS

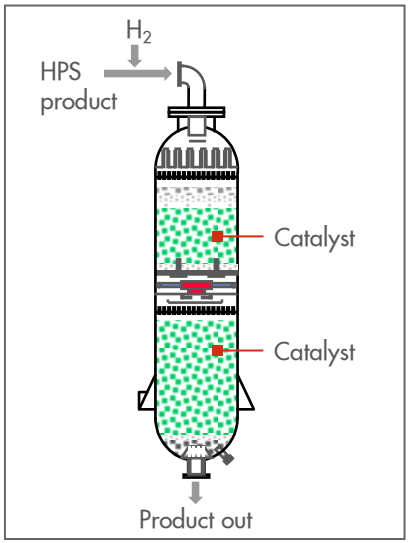




- Shell Gasifications Process (SGP)
- 18 SGPs
- Reaction temperature: 1200-1400 °C
- Refractory clad reactor

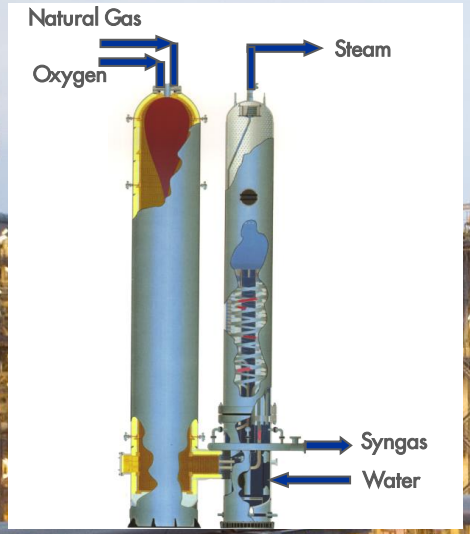


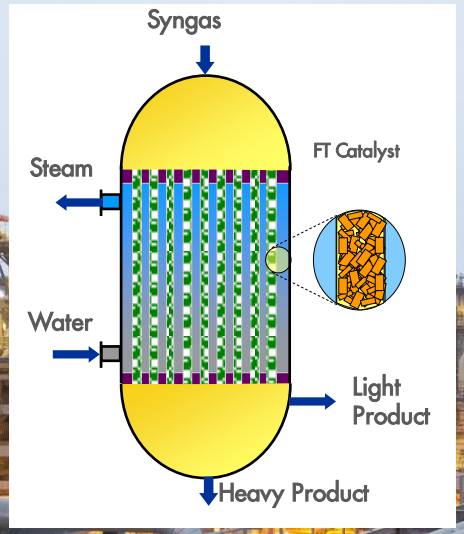
- Heavy Paraffin Synthesis (HPS)
- 24 reactors of 1,200 tonnes each
- 10's of thousands of tubes

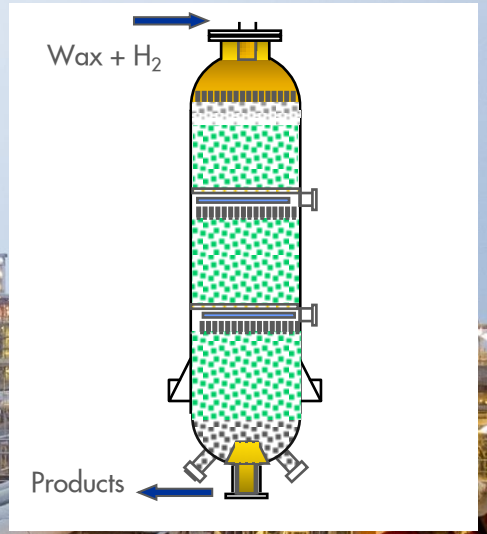


- Heavy Paraffin Conversion (HPC)
- Largest hydrocracker in Shell
- Catalyst dedicated to GTL
- Maximizing yield of gasoil and BO

PROCESS INTENSIFICATION AND SCALE-UP FROM SMDS TO PEARL







SGP	HPS	HYDROCRACKER
SCALE-UP	INTENSIFICATION	SCALE-UP
3.5x	2x	5x

PEARL GTL

TECHNOLOGY PROOF POINTS

- All products on spec
- All units and Plant proven design capacity
- Demonstrated plant reliability
- Completed first planned turn around: no major findings

GTL PRODUCTS

SHELL GTL PRODUCTS

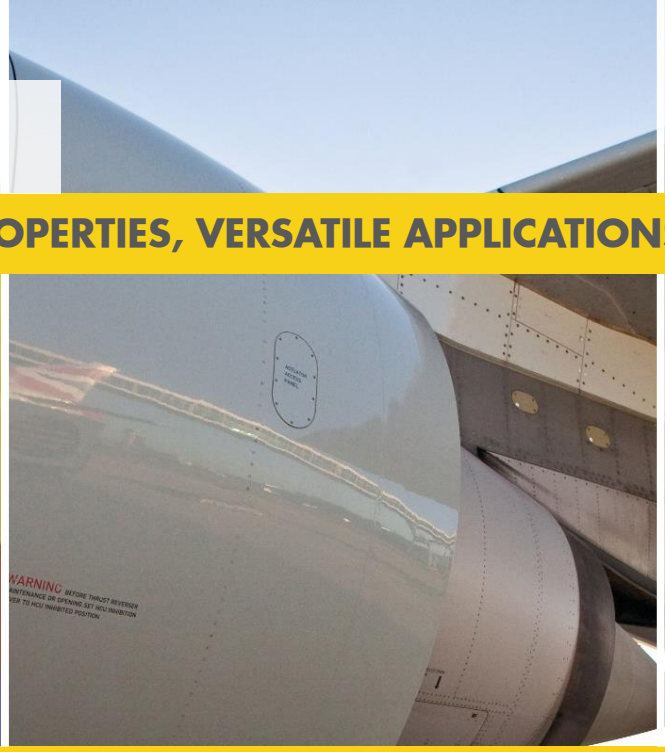
HIGH QUALITY, CLEAN, ODOURLESS

VIRTUALLY FREE OF SULPHUR, NITROGEN AND AROMATICS

READILY BIODEGRADABLE AND ENVIRONMENTALLY-FRIENDLY

GTL PRODUCTS

UNIQUE PROPERTIES, VERSATILE APPLICATIONS



GTL NAPHTHA

- GTL NAPHTHA
- Chemicals
- +10% yield of high value chemicals

GTL KEROSENE

- GTL JET FUEL
- Clean burning
- Higher energy density by weight
- ASTM approval for GTL kerosene as a component for Jet Fuel
- 1st commercial flight using GTL kerosene based jet fuel 12th Oct 2009

GTL GASOIL

- GTL GASOIL DIESEL FUEL BLENDS UP TO 100%
- Improved engine durability
- Reduced local emissions
- Less noise and smell
- Immediately applicable without investing in new infrastructure or engines

GTL PRODUCTS

UNIQUE PROPERTIES, VERSATILE APPLICATIONS

GTL NORMAL PARAFFIN

- Chemicals and detergent feedstock

GTL BASE OILS

- In new engine oil formulations
- Energy conserving – low viscosity
- Improved engine/after treatment device durability
- Reduced emissions
- Shell is world's leading marketer of finished lubricants

- ** GTL Base Oils are only produced by Pearl*

GTL WAXES

- Complies with United States Food and Drug Administration (USFDA) regulations
- Odourless, white, opaque, consistency
- Sharp melt/cooling and low viscosity - improves application speed

- ** GTL Waxes are only produced by Shell MDS*

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SECTORS WHERE SHELL GTL FUEL IS SUCCESSFULLY APPLIED

Shell
GTL Fuel

CANAL BOATS

WASTE COLLECTION

BUSSES

RAIL

LAST MILE DELIVERY

STATIONARY POWER

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SHELL PUREPLUS TECHNOLOGY

Shell Helix Ultra & Pennzoil Platinum with unique Shell PurePlus Technology

- Next generation motor oil featuring a base oil made from natural gas
- Significantly more stable product than conventional base oils
- Performance benefits include improved cleaning and wear protection, lower volatility, and fuel economy benefits

NO OTHER OIL KEEPS YOUR ENGINE CLOSER TO FACTORY CLEAN

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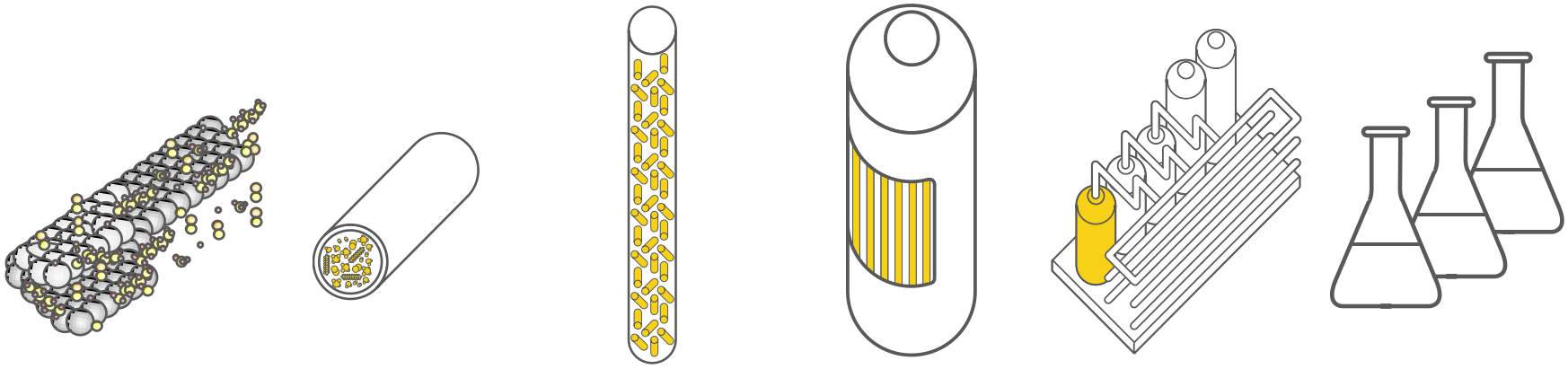
CONTINUED INNOVATION

INNOVATION

MASTERING TECHNOLOGY AT ALL SCALES



NM SCALE
Catalytic Active Site

MM SCALE
Catalyst Particle

CM SCALE
Reactor Tube

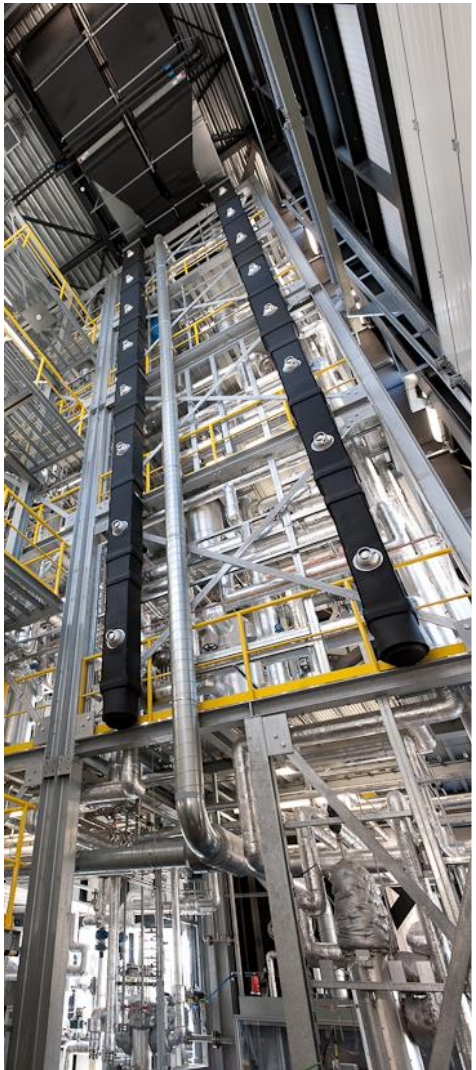
M SCALE
Multitubular Reactor

KM SCALE
Integrated Complex

GLOBAL SCALE
GTL products

INNOVATION PROCESS

1. DISCOVER → **2. DEVELOP** → **3. DEMONSTRATE** → **4. DEPLOY**



INNOVATION IN FT TECHNOLOGY

CATALYST TUNING

Main Process changes

- Syngas Pressure: High
- Water Pressure: Low

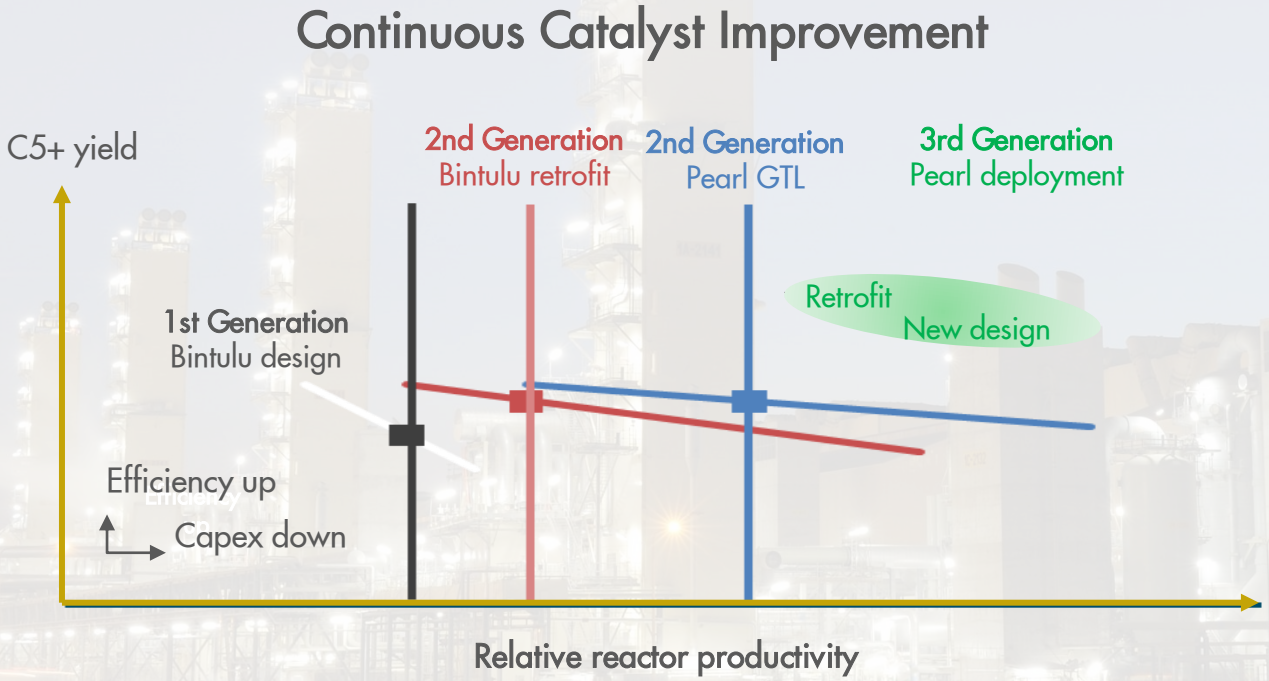
- Syngas Pressure: Low
- Water Pressure: High

Catalyst Tuning

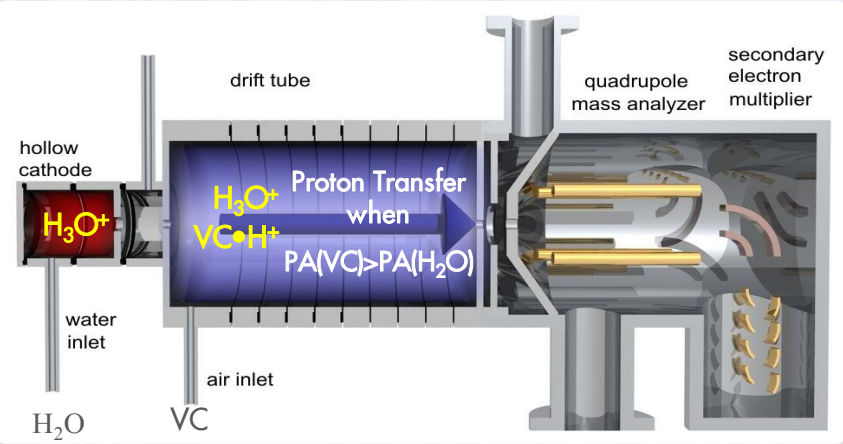
- Poisoning
- Selectivity
- Thermal Stability
- Activity
- (Hydrothermal) Stability

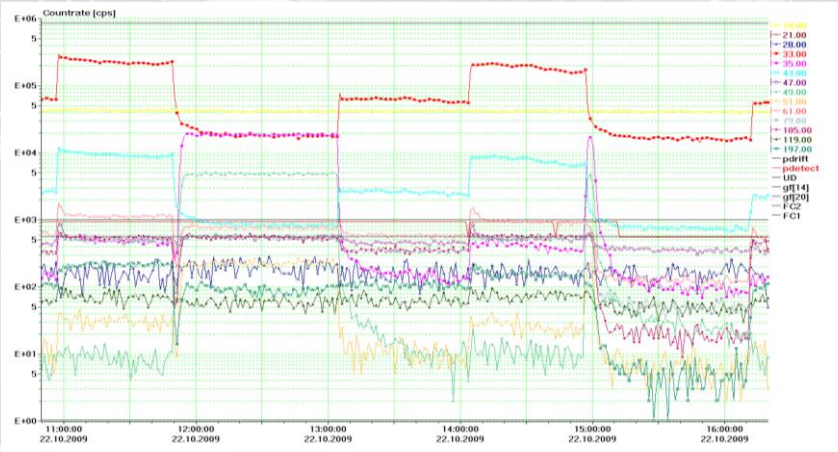
INNOVATION IN FT TECHNOLOGY

CATALYST TUNING



IMPROVED GAS TREATING THROUGH ADVANCED ANALYTICAL TECHNIQUES





Proton Transfer Reaction Mass Spec:

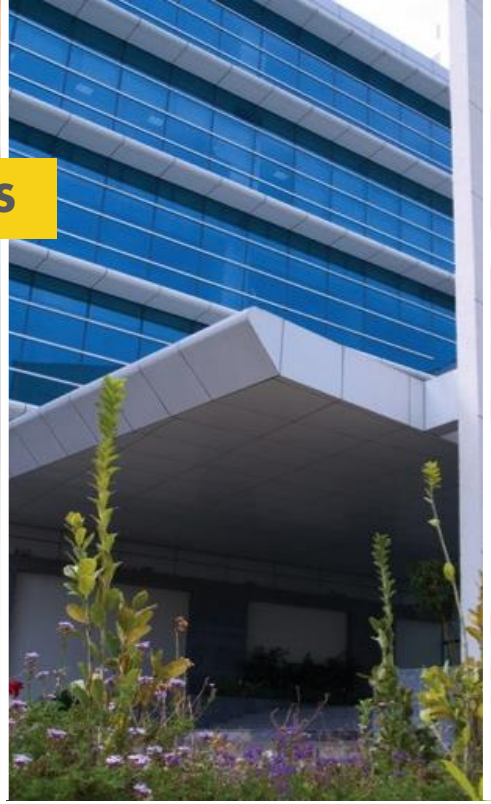
- Trace contaminants (ppb) in syngas
- HCN, NH_3, COS, H_2S, RSH, Carbonyls

- Optimization of operating conditions
- Improvements in treating design

- Increased catalyst lifetime
- Cost effective treating

GTL PRODUCTS

INNOVATIONS AT SHELL MDS



2003
SHELL GTL SARALINE 185V
DRILLING BASE FLUID

2003
SHELL GTL SARAWAX SX105
SPECIALTY WAX

2013
SHELL GTL SARAPHAEZ
PHASE CHANGE MATERIAL

2014
SHELL GTL SARAWAX SX80
SPECIALTY WAX

2000 — 2014

2006
PEARL FID, TRIGGER FOR FURTHER SPECIALTY DEVELOPMENTS

2011
NEW SOLID WAX PLANT START-UP

2013
SHELL GTL SARAWAX SX100 PREMIUM

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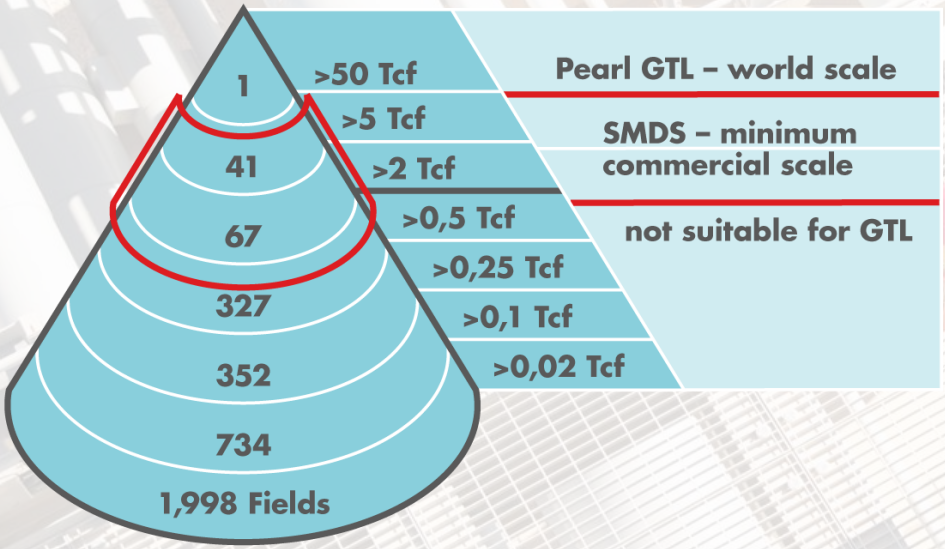
MEDIUM SCALE GTL PLANTS

GOING SMALLER UNLOCKS NEW OPPORTUNITIES

Number of undeveloped gas fields

IHS International E&P Database



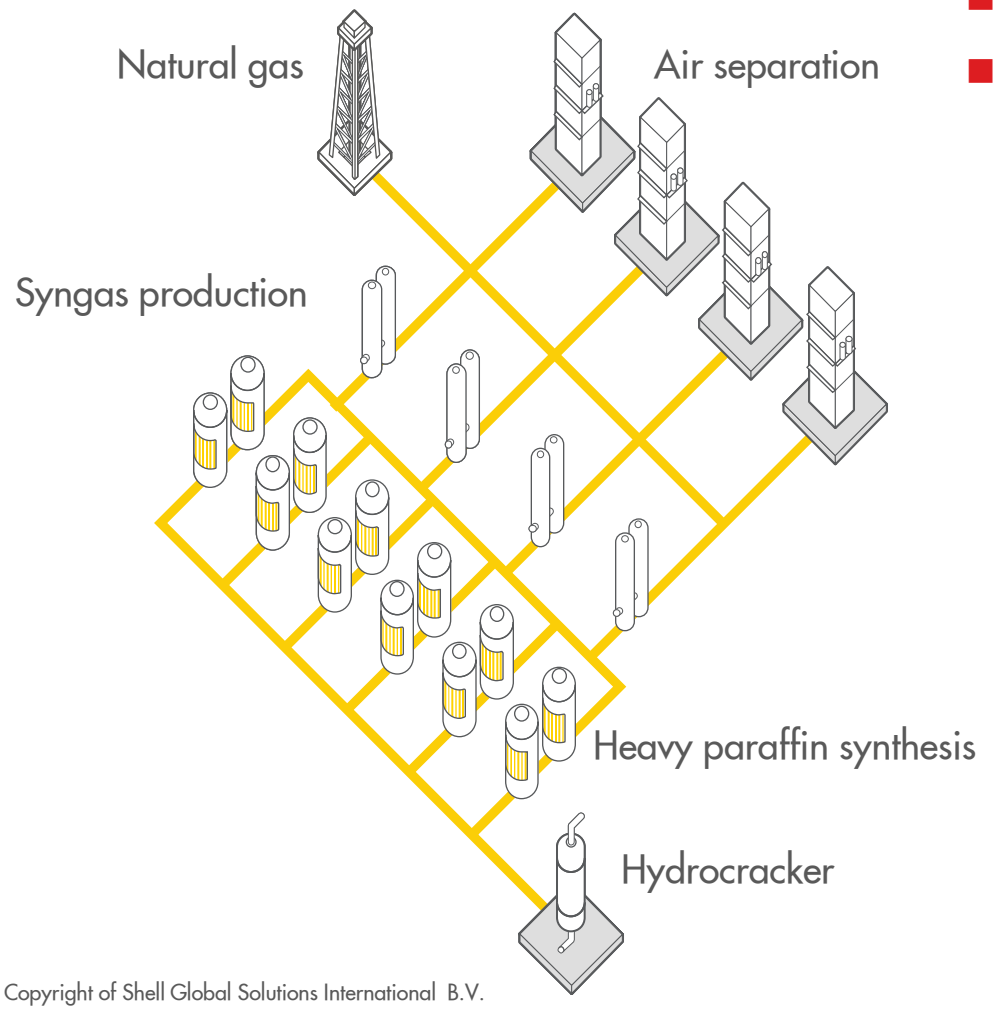
A Flexible size opens up a new opportunity set:

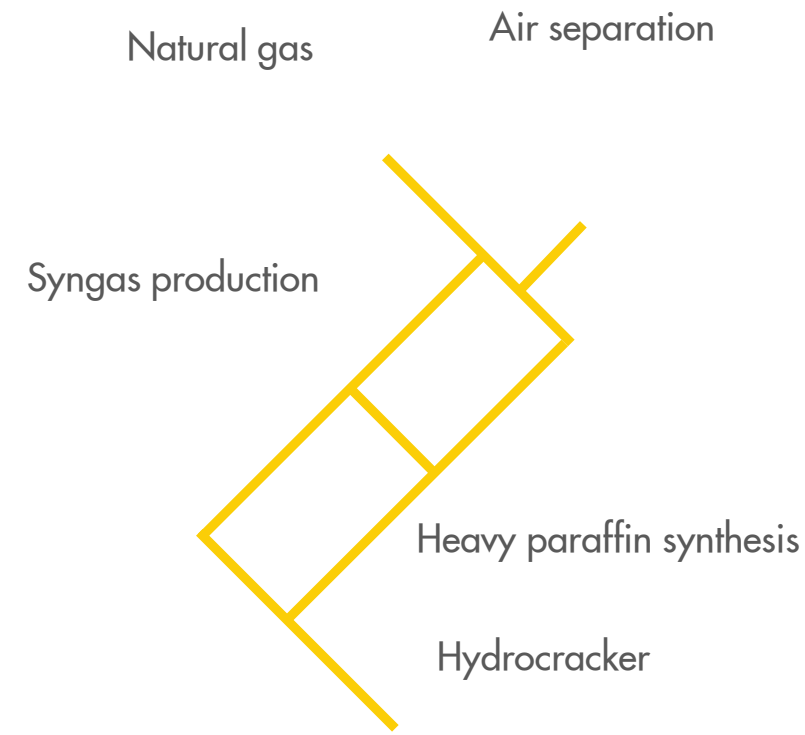
- Possibility to develop more plentiful and diverse, smaller gas resources
- Standardised GTL unit, faster to implement with sufficient flexibility to tailor to project needs
- Better potential to utilize existing infrastructure

A SMALLER TRAIN FROM THE LARGEST BLOCKS

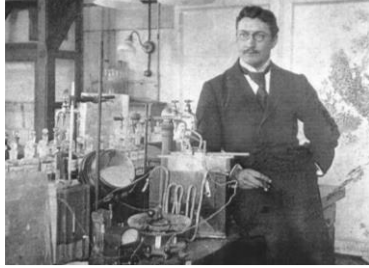
Now developed a mid scale option

- Competitive, scaled for local market
- Expandable
- => options





IN SUMMARY



- GTL is a key and unique component of Shell's suite of integrated gas solutions
- GTL a 40 year journey of process and product innovation which continues
- Shell GTL technology fully utilises Shell's global strengths

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Q&A