Members of the Group Financial Risk Committee

IST Trading Compliance & Control Risk Review

IST is looking forward to hosting MBAC at 20 Canada Square on 26 October 2017.

The draft pre-read for the October 2017 meeting is attached for your review. It consists of a paper which we intend to submit as pre-read for the meeting and a slide deck which will be used in the formal review session on the day.

This pre-read covers the following areas:

- developments in the external environment and IST's response;
- identification of key risks and improvements IST made to effectively manage risks in 2017; and
- an update regarding regulatory developments and legal cases.

We will also visit the trading floors with MBAC again this year. The following topics have been selected for discussion in this context:

- Blockchain application in IST;
- Crude trading and Oil Market Analytics; and
- Virtual Utility Strategy rollout in the European Gas & Power business.

We welcome the opportunity to review with you at the GFRC meeting on 10 October and are looking forward to receiving your input and guidance.

David Bucknall
October 2017

Main Board Audit Committee Meeting, 26 October 2017

Group Risk: Trading Compliance & Control

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Main Board Audit Committee Meeting, 26 October 2017

Group Risk: Trading Compliance & Control

1 Introduction

This paper summarises key changes in the business environment, key risks for IST, as well as improvements implemented since the last MBAC review in October 2016.

2 Environment and IST's response

Since the October 2016 meeting at Canada Square, oil prices have remained within a range of $45 to $55 per barrel, with Henry Hub gas remaining around $3 per MMBtu. Prices across the crude oil and products markets have been influenced by financial market fund flows as well as physical market fundamentals. This environment has created both opportunities and challenges for IST. The oil business is slightly behind plan year to date, with a strong performance in 1Q offset by a weak 2Q. The gas business has delivered rateably through the year.

US crude exports are now running at record levels, driven by strong demand in Asia. The light sweet nature of US shale crudes has caused a structural shift in crude quality, opening up blending opportunities. IST has a strong market share in this export and blending activity. However, the new opportunities are counterbalanced by a reduction in trading value in the US onshore business, as the market becomes less constrained physically.

OPEC cuts eventually moved the Brent market from shallow contango into backwardation in 3Q 2017. Furthermore, OPEC cuts of heavier, higher sulphur crude has narrowed differentials. Global demand for products continues to surprise, with China and the East continuing to dominate demand growth.

In this trading environment, the Global Oil trading benches were, generally, holding bullish crude and products structure, crack spread, and locational arbitrage positions throughout 2017. This strategy produced a strong result in 1Q. However, 2Q results were subdued by a sell off in the oil price driven primarily by financial investors withdrawing capital. This also put pressure on product spreads.

Hurricane Harvey accentuated the bullish fundamentals in 3Q. Global Oil MVaR increased to $51m – the highest value observed in 2017. The Gasoline and Distillate books triggered gain alerts at the end of August. However, the crude book saw gains on spreads and outright length offset by losses as WTI declined in value relative to Brent, due to unexpected strength in the East.

Environmental products prices strengthened through the year, allowing the Global Environmental Products (GEP) business to deliver incremental value from the Clean Energy acquisition, combined with new transactions in biogas.

The relatively warm winter in the United States and healthy natural gas supply resulted in low volatility and range-bound natural gas prices in the United States. IST's North American Gas & Power (NAGP) business continues to deliver value through its focus on customer margin-based activities and its Virtual Utility Strategy. The European Gas and Power (EG&P) business continues to execute deals with Retail Energy Providers (REPs) to grow its presence as energy supplier providing customised innovative solutions for retailers. The EG&P performance in 2017 was also driven by strong earnings related to the investment in the Bahia de Bizkaia Electricidad (BBE) power station in Spain.

While the LNG market is expected to be oversupplied in the longer term, the Global LNG business generated value from continuous portfolio optimisation and the short-term tightness in LNG spot markets on the back of bullish near-term LNG positions, on account of delays to new supply and Chinese buying.

Putting performance in context, The Oliver Wyman competitor benchmarking review for the year 2016 showed that IST outperformed various competitor groups including the average top three Oil & Gas Majors, Independent Traders, and Banks in terms of gross margin growth. IST profited particularly from its diversified portfolio with Global Gas performance compensating for tighter trading margins in Global Oil where the record year performance of 2015 could not be repeated.

3 Business update

3.1 New activity in the past year

The oil business made progress in a number of areas:

- Working capital is a critical resource in oil trading. We added and extended a number of working capital structures within the framework developed with Treasury. This enabled us to maintain oil inventories of around $6bn at competitive funding costs.
- We executed an agreement to build an industry-leading terminal connected via pipeline to BP's refinery in Rotterdam. This will be in operation in 2020 and will add significant value through a reduction in storage costs, lower freight and demurrage, and further trading and optimisation. This arrangement will be accounted for as a finance lease.
- In 1Q 2017, IST paid $155m for Clean Energy's existing biomethane production facilities, additional facilities under construction, and third-party supply contracts. The NPV of this transaction was $323m. Performance to date has been ahead of plan. In 3Q, we divested the producing assets to a 50% BP owned, non operated joint venture with Aria, Clean Energy's existing development partner. This was the final step in the transaction, ensuring that operatorship transferred from BP to an experienced operator. Future biogas projects will be developed by the JV.
- The Derivatives bench participated for the first time in the Mexican government hedging programme. The bench expects

to collect a risk premium as the deal prices out in November 2018.

- Jurong Aromatics Corporation (JAC) went into receivership in 2015 owing IST $190m. IST worked with the receiver to toll the plant and to recover some of the losses. The plant has now been sold to Exxon for around $1.6bn. Senior secured lenders will receive a payout of around 70%. Unsecured creditors will generally receive no payout, though IST's recovery totalled over $100m due to the effective management of the tolling agreement.
- Collaboration with Downstream's Fuels Value Chains, whereby infrastructure is optimised by IST, has reached record levels ($275m forecast in 2017, a 200% increase on 2014).

Selected natural gas business highlights for 2017 are summarised as follows:

- The LNG business successfully participated in a competitive process to purchase 18 cargoes per year from Oman LNG from January 2018 for 7 years. This gives IST's LNG business access to flexible supply from the Middle East at a highly competitive price and a potential backfill option for an existing LNG sale to Kuwait.
- Mozambique LNG supply volumes have been confirmed through the Coral Floating LNG project, with the final investment decision (FID) being taken in 2017.
- Trading in merchant LNG cargoes has increased 30% since 2016.
- The European Gas and Power business has replicated the Virtual Utility Strategy previously developed in North America. In 2016, EG&P invested in a new market entrant, Pure Planet, launched by former founders of Virgin Mobile in the UK. The commercial launch of Pure Planet occurred in May 2017, and the entity is now focussed on growing its customer base. Further retail energy provider (REP) transactions have been progressed in the UK, Germany, and Italy.

- BBE performance exceeded plans in 1H 2017. This was mainly driven by successful arbitration outcomes.
- NAGP started a natural gas marketing business in Mexico making BP one of the first private companies to supply natural gas to this key strategic market. Delivery is at least 200,000 MMBtus per day to 8 states in Mexico in 2017, making BP the largest new entrant. The gross margin from NAGP activities in Mexico is predicted to grow to $34m per year in 2022.

3.2 Looking forward

IST is focussed on achieving earnings stability and growth. A number of new initiatives will support these objectives in 2018 and beyond:

- The oil business will continue to grow access to high value crude and product flows through partnerships and by participating in export finance structures used commonly in emerging markets. This approach will create opportunities to market crude to China and to sell products in West African markets.
- The LNG Greenfield strategy, to create incremental and diversified sales, has been progressed further through Project Açu in Brazil. IST is in the process of negotiating an LNG sale for 23 years for 1.3 million tons per annum. This project will include optionality to sell LNG at premium power netback prices, or use equity pipeline or third party gas to replace the LNG. IST also aims to build a Brazilian power trading platform through this project.
- The International Maritime Organization has announced a change to the Marine Pollution (MARPOL) Convention, reducing the sulphur limit from 3.5% to 0.5%, effective 1 January 2020. This change has the potential to cause a significant dislocation in global oil markets, impacting crude differentials, product spreads and refinery economics. IST is leading the BP response to this change.
- Progress has been made in emerging markets growth initiatives. India Gas Solutions (IGS) has updated its marketing

plans following further Upstream sanctions. IST is also targeting oil products markets in Latin America, the Caribbean and will extend its domestic Russian activity.

- The proposed acquistion of Woolworths in Australia will create a short of around 12 million barrels per year for gasoline and 3 million barrels per year for distillate. IST will allow BP to capture value across the full supply chain through close collaboration with the FVC and can build a significant blending business in the East on the back of this transaction.
- IST signed an agreement for strategic cooperation in Russia and beyond with Rosneft. IST will be able create value through significant natural gas flow arising from resultant supply and marketing collaboration in Europe and global LNG、
- IST has agreed to manage offtake from Aker-BP, giving IST access to some significant trading optionality

4 Risks and risk management

4.1 Key risks and health of our control environment

IST uses the Group's enterprise risk management process to identify key risks. The assessment of those risks is shown on the IST risk matrix in Appendix B. The overall risk profile of IST has remained broadly consistent with the 2016 assessment.

Some structural changes were introduced in the 2017 risk profile to simplify and to reflect how IST management addresses risks. These are summarised as follows:

- A combined risk related to "Failure to deliver Trading Performance (RCOP)" was introduced – this risk includes several previously identified risks including Major Shift in Market Structure, Market Risk Exposure, and Term LNG Market & Credit Risk
- Cash-related risks are captured in a combined risk related to "Failure to deliver IST Operating Cash" – this risk includes Commercial Impact from Loss of Group Liquidity, Failure to

Deliver Annual Planned Cash Flows, as well as Counterparty Credit Risk
- The Business Regulations risk was redefined and now captures "Legal & Regulatory Compliance" risk
- Rail & Truck Transportation exposure risks were combined into a single risk called "Onshore Transportation Exposure"
- All asset-related risks were combined into a single "Major Projects" risk – this risk includes prior year risks related to Engineering Procurement and Construction (EPC) Completion Risk, Freeport, Clean Energy Assets, and Coral FLNG
- The "Adverse Regulatory Change" risk now covers both financial and physical regulation aspects

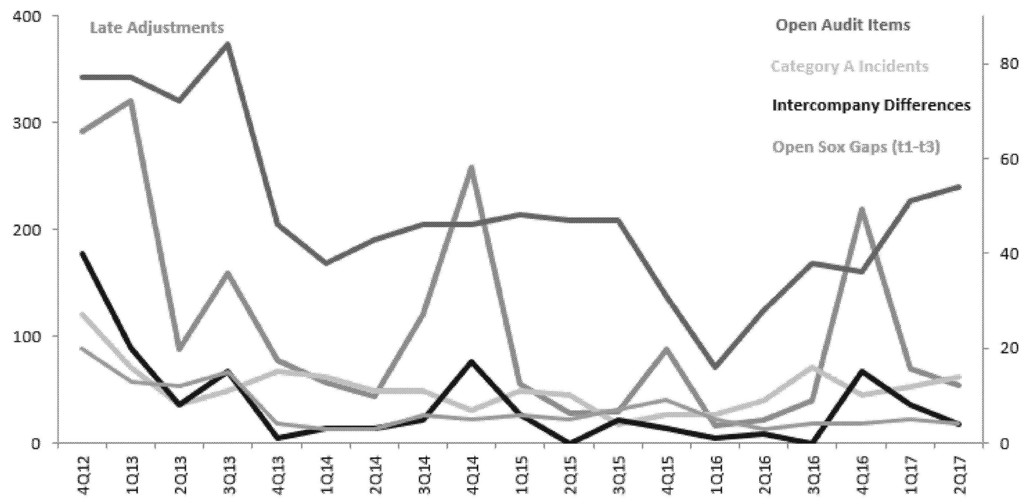
For the combined risks mentioned above the underlying component risks are still managed at a disaggregated level within IST.

The following key risk assessment and mitigation changes are noted in comparison with the submission in 2016:

- Rogue Trader – rollout of Interlocking Accountabilities (ILA) reporting and Palantir continues
- Cyber Risk – recognition that there is likely to be a higher frequency of lower impact events
- Marine Transportation Exposure – reduction of likelihood driven by safety improvements in the industry and the reduction of marine movements

IST continues to manage market price risk using Market Value at Risk (MVaR). Additional tools and metrics including PnL and Cash stress testing, volumetric limits, drawdown and gain alerts, and the Long-term Framework based on Net Present Value (NPV) and Net Present Value at Risk (NPVaR) are applied to complement MVaR.

IST has managed to sustain the robust control environment which has been in place in previous years as can be seen from the evolution of selected key performance indicators shown in the chart below.



IST continues to complete and close audit findings on time, with no overdue management actions outstanding. The number of audit findings has increased from a low point in 1Q 2016. We look to learn from audit findings and Category A incidents, using these to drive improvements in the control environment.

4.2 Key risk management improvements

Progress has been made in the following key areas since the last update to MBAC in 2016:

- A "Stay Safe Campaign" and "Learning Organisation" have been launched in 2017, with a focus on personal safety, compliance and cyber risk
- In 2Q 2017 a review of IST's Information Security Framework was initiated for implementation through 2018
- IST market risk concentration analysis was performed in the Commodity Risk teams from 2Q 2017 – analysis of MARPOL trading strategies was initiated
- New stress testing scenarios were added to reflect current events and resultant market risks arising from these events – scenarios covered included events in Qatar and North Korea

Rogue trader risk and core system infrastructure:

- IST continues to roll out ILA reporting functionality using Palantir – the inclusion of the Emissions and Treasury Trading businesses is nearing completion and NAGP will be implemented in 1Q 2018.
- The second phase of the Simpler Scalable Standardised (S3) programme has been kicked off in NAGP in 2017. This remains a multi-year programme to reduce the number of transaction systems and to align and simplify business processes across IST.

Counterparty credit management:

- Although IST's average credit exposure has increased in line with the flat price environment from $9.3bn (2016) to $10.7bn (YTD 2017), IST's credit risk profile has improved. The sub-investment grade portion of our portfolio has decreased from an average of 43% to 36%. Expected Loss (EL) levels have decreased from an average of $43.7m to $27.8m. Gross credit losses are trending lower than last year with $24m YTD 2017 compared with $63m for 2016.
- The IST net derivative balance has decreased since our last meeting from a net asset position of $2.1bn to $1.5bn as of end of 2Q 2017.
- The credit reserve methodology and associated system development is on schedule to achieve compliance with IFRS9 and related requirements by year-end.
- Additional systems improvements and consolidation are ongoing, with the 2017 delivery agenda addressing letter of credit management, physical MTM exposure and financial oil Potential Future Exposure (PFE).

Cyber risk mitigation:

- Workplace modernisation and the rollout of Windows 10 will lead to information classification tools being deployed in IST. With these tools employees will label and encrypt IST's most sensitive documents to prevent them from inappropriate use.

- A Cyber Business Continuity Planning (BCP) exercise has been scheduled for 4Q 2017 for the IST EXCO team members. The key objective of the exercise is to test the command and control structure of IST in the event of a global cyber incident.
- Lessons learned from the insider extortion attempt are being applied, especially controlling access to shared files, and archive of historic data

Organisational changes:

- Geir Robinson joined IST as Chief Risk Officer (CRO) in London in April 2017. The CRO role was added to provide leadership in the areas of risk speciality. A new role of Performance Director has been created to foster a culture of learning across IST's operations. No change was made in terms of the underlying regional Finance and Risk teams as part of this appointment. The CRO is responsible for policies related to market, credit, and operational risk, organisation of the global risk networks in these areas, coordination of the IST risk management matrix, and oversight of HSSE and NOJV risks.
- The migration of high-volume and lower-complexity activity to BP's Global Business Services centre in Budapest continued in 2017. After a period of transition key performance indicators now show that this move has achieved the goals outlined.

Blockchain initiatives:

- IST has participated in Blockchain proof of concept initiatives in 2017 to determine how this emerging technology can be applied within IST. Project Forcefield is the first project to reach critical mass of market participants with Energy Majors, Trading Houses, and Banks participating in the initiative geared towards creating a fully digitised cross-industry back office platform using distributed ledger technology and smart contracts.
- The benefits arising from this technology are reduced operating costs including reduced working capital needs, a reduction of

inefficiencies in post trade execution, and improved operational risk management including fraud prevention.

5 Compliance risk management updates

Redacted - First Amendment

Redacted - First Amendment

5.2 Controls and processes

IST closely monitors regulatory changes and has controls and processes to ensure compliance, both of a regulatory and ethical nature.

- Transaction and Order Book Monitoring: In 2016, the EU Market Abuse Regulation was introduced which required the implementation of surveillance models to analyse order book activity such as bids and offers. IST worked with Palantir in 2016/2017 to implement 7 surveillance models to monitor for particular types of market abuse (eg spoofing) in BP's order books, which are now operational in the UK. A new vendor, Scila, has been chosen to deliver enhanced surveillance models to monitor the order book activity of all IST businesses – this work is expected to be completed by end 2Q 2018.
- Mobile phone recording: Mobile phone recording was implemented in London in August 2017. Mobile phones remain a non-approved channel for business communications except when out of the office and approval has been obtained.
- Personal Account Dealing (PAD): Further to completion in London in 2016, an annual certification-based compliance system for PAD has been rolled out to all IST locations outside of London in 2017. Questions on the attestation arose in connection with investments in non-public companies active in the same commodity markets as IST, dealings in shares of customers/counterparties, speculative trading of foreign exchange and the definition of "acting on behalf of". We are working to clarify ambiguous language regarding

these areas in the Global Trading Guidelines and related FAQs to ensure consistency across the regions.

5.3 Relationships with regulators

UK: IST has a new relationship manager at the FCA; the relationship remains constructive and BP has been advised that the FCA will decrease the frequency of regular supervisory meetings and instead conduct visits focused on reviewing particular areas of business on an irregular basis. Recent interactions have included:

- Following the FCA Culture and Incentives Thematic Review in 2016, IST received feedback that IST is amongst the top quartile of firms visited by the FCA in this review. There were limited suggestions for improvement which included using metrics as monitors of culture, including a claw-back to the cash element of the bonus and the creation of a "Culture Dashboard". IST is developing such a dashboard for consideration at its Q4 Exco;
- IST attended a meeting at the FCA in July to present its strategy – the meeting is an annual fixture and forms a standard part of the supervision of an FCA "fixed portfolio" firm. Included discussion on the IST business model, current group and IST initiatives, IST financial performance and key drivers of revenue as well as regulatory implementation and compliance. No actions arose from the meeting;
- FCA requested an overview of IST and BP technology arrangements and a meeting was held in September covering risks, budget, resource, dependency on third parties, resiliency, contingency arrangements, management information, governance, functional input to new IT developments and challenges to delivery. The engagement was positive with FCA appreciative of the information received; and
- In September 2017, the FCA met with E&C to review BP's preparation for MiFID II in the areas of governance structure, programme assurance, management information and implementation progress. The FCA was satisfied with the

status of the preparations and will return post implementation for an update.

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5.4 Significant IST concerns in 2017

There were two incidents concerning release of BP proprietary information. The first arose in Chicago and BP filed a lawsuit against a BP crude market analyst in May relating to theft of BP trade secrets and confidential information. After being informed of the incident the new employer of the analyst informed BP that it revoked the job offer. The analyst recently died in a fatal accident and BP has withdrawn the lawsuit. Interviews with other market analysts as witnesses to the case led to a London analyst being suspended and then dismissed for her failure to cooperate fully and honestly in the investigation and a failure to act with good judgement and integrity and in the best interests of BP.

The second incident related to a market analyst in Singapore who had recently resigned. An initial review of his laptop showed that he had created a number of files prior to his departure which appeared to be in preparation for export and we were aware that he printed documents whilst in the office at a weekend. Forensic analysis was inconclusive as to whether the files were exported from his laptop. The analyst was interviewed and was forced to return the hard and soft copy documents to BP.

We are working with the Digital Security & Risk team to enhance our ability to protect commercially sensitive information by using the Azure Information Protection tool. This is a classification tool which allows the document owner control over who can receive/open/edit/print specific documents. We are also considering the addition of the Market Analytics and the Marketing & Origination teams to the Must Record List (MRL) to ensure regular monitoring of Instant Messaging and email.

Global Oil Americas was also involved in a bitcoin extortion to release BP data (personal and commercially sensitive information). There was no known impact on trading activity and markets and BP worked with the National Crime Agency and the FBI to identify the perpetrator. The person was identified as a BP employee in the Chicago office, the FBI searched the employee's home under warrant and data is being gathered by the FBI in preparation for possible arrest. Data monitoring software (Veronus) is now being rolled-out to all files, which will enable faster interrogation of data in the event of unauthorised access.

Cyber Security will be one of the topics covered in the 2017 Safety Compliance Stand-Down in October 2017. The Stand-Down focuses on three areas – personal safety, cyber safety and compliance safety – using incidents to highlight unsafe and unacceptable behaviours.

IST has a few significant legal cases pending and an update is provided in Appendix A.

6 Conclusion

Our strategy of building a platform of stable margin-based income supplemented by accessing more diversified trading opportunities and optimising group flows is succeeding. We have been able to withstand changes in the market through our integrated business and analytical capability, although we are still working to improve the timing of creating our trading positions, by better understanding financial fund flows.

We continue to strengthen our control environment and manage our key risks, through organisational alignment, leveraging big data, credit and working capital management improvements, as well as by strengthening our compliance culture and monitoring activities.

We look forward to a fruitful meeting with you in October.

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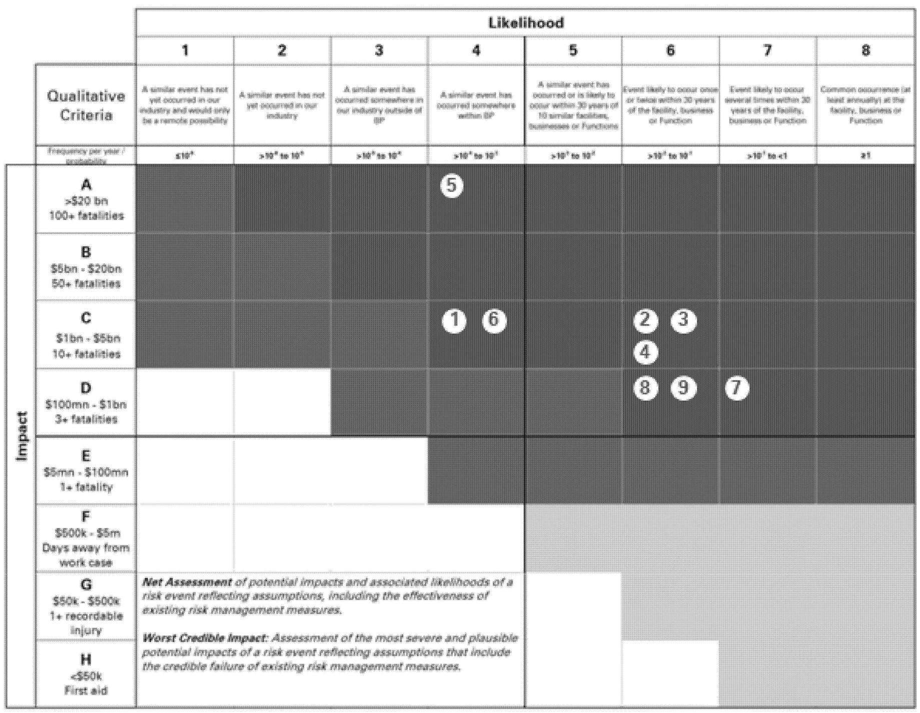
Appendix B: IST's 2017 risk matrix

Worst Credible Assessment

#	Risk description
1	Rogue Trader
2	Legal & Regulatory Compliance
3	Failure to deliver Trading Performance (RCOP)
4	Failure to deliver IST Operating Cash
5	Marine Transportation Exposure
6	Onshore (Truck & Rail) Transportation Exposure
7	Tax Risk
8	Cyber Risk
9	Business Disruption



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IST Trading, Compliance & Control

Main Board Audit Committee

October 2017

Agenda – October 26th 2017

Agenda items	Time	Lead Speakers
Introduction	09.15	Alan Haywood
Strategy and Commercial Environment		Alan Haywood/David Bucknall
Risks and Controls		David Bucknall/Geir Robinson
Illustrations - Carbon Trading and Clean Energy acquisition - Houston BCP - Cyber Incident		David Bucknall/Geir Robinson
Regulatory Developments		Tom Nuelle
Floor Walk - Blockchain (3rd floor) - Crude and Market Analytics update (1st floor) - Virtual Utility Strategy (2nd floor)	10.15	John Jimenez/Saad Rassak Dan Wise/James Davis David Knipe/Jason Tate
Close	11.00	Alan Haywood

IST Strategy

IST's Strategy continues to be to grow RCOP and cash delivery through:

- Supporting Group Segment strategies through providing **operational resilience** and **optimised** supply and offtake;
- Growing Downstream value across the **Integrated Midstream**;
- Growing incremental value on **Upstream production**
- **Focused origination** to build bridgeheads into growth markets and key flows, to broaden optimisation opportunities and add traded market insight;
- Investing in **analytical and trading capability** to identify and capture distinctive market opportunities;

Underpinned by:

- **A strong compliance culture**;
- Disciplined use of the **Groups resources**;
- Enabled by a **cost base** aligned with **benchmarks**.

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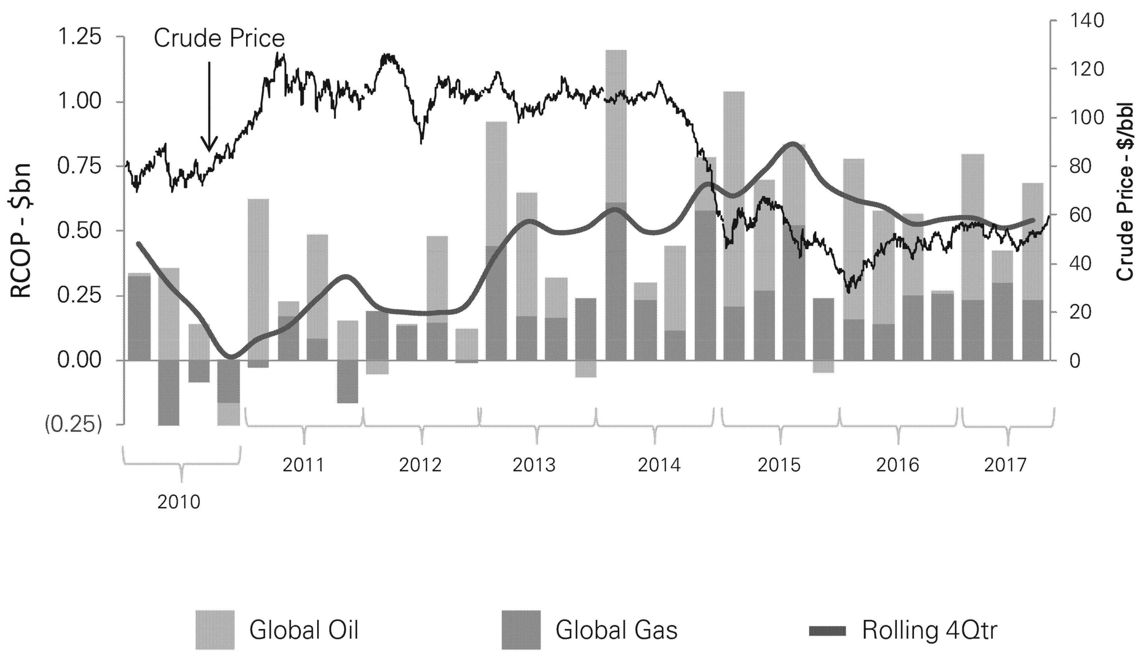
IST Financial Contribution

2017 3Q YTD Financial Delivery

- RCOP $1.9bn
- OpCash $3.0bn



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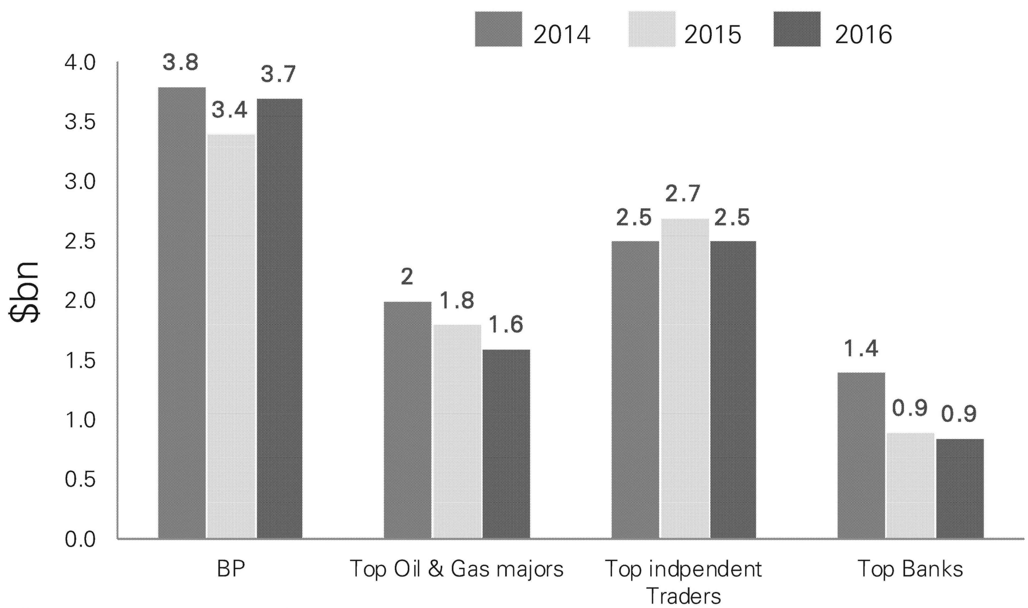
IST outperforms competitors in trading GM growth – significant oil trading exposure curbs performance for top independent traders

Top-3 competitor average gross margins



Gross margin growth

	BP	Top Oil & Gas majors	Top indpendent Traders	Top Banks
2013-14	15%	20%	5%	50%
2014-15	(10)%	(10)%	5%	(35)%
2015-16	10%	(10)%	(10)%	(5)%

Data sourced from Oliver Wyman

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IST activities support BP today and for the future

BP's Strategic Pillars	IST activities – business as usual	IST activities - growth
Shift to gas and advantaged oil in the upstream	• Segment support • Crude and products trading • LNG trading • Gas Value Chains • Greenfield LNG	• NOC partnerships • Gas Value Chains and downstream gas • New Greenfield LNG
Market led growth in the Downstream	• Midstream support • Mexico • Woolworths • MARPOL	• China • India • Russia • Latin America
Modernising the whole group	• Core systems infrastructure • Big Data • GBS • End to end cost to trade	• Blockchain • Quantum computing • Emerging disruptive technologies
Venturing and low carbon across multiple fronts	• Clean Energy acquisition • Global Environmental Products trading • Support Lower Carbon Taskforce	• Global Power trading • Biofuels • Additional biogas projects
Financial Framework	• $0.25bn CAPEX p.a. • Self Funded Inventory ($5bn in oil) • $1.3bn Fixed Assets	• Partnerships (External Funding) • Incremental CAPEX and leases • Incremental Self Funded Inventory • Long Term Commercial Commitments and tolling

Carbon Trading and Clean Energy

Carbon Trading

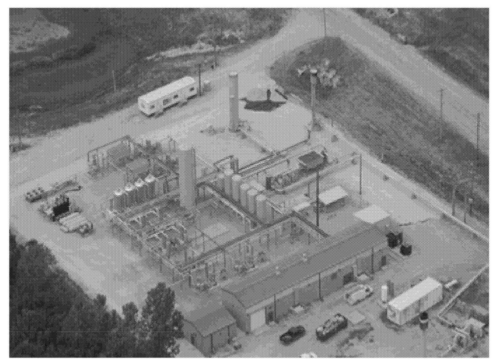
Objectives are to:-

- Manage BP Group's renewable certificate compliance requirements;
- Originate renewable energy credits through third party transactions;
- Take limited proprietary trading positions based on market view;

Markets traded by Global Environmental Products (GEP) business include:-

- Europe - EUA/EUAA
- US – RINS
- California – LCFS
- China – various exchanges and CCER
- New Zealand
- Australia

Clean Energy acquisition



Shelby landfill gas facility

1Q 2017
Paid $155m for Clean Energy's biomethane production facilities, facilities under construction, and third-party supply contracts

3Q 2017
Divestment of producing assets to non operated JV with Aria, an existing development partner of Clean Energy

Original NPV of $323m, with 2017 ahead of plan
Biogas business underpins 2018/2019 growth
Additional Biogas projects being developed though Aria JV

Per Group Scorecard	2013	2014	2015	2016	2017	2018	2019
Renewable markets trading earnings ($m)	15	10	65	82	145	180	194

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IST RMR 2017 – Overview

Key Risk	Comments/Mitigation	2016	2017
Failure to deliver Trading Performance (RCOP)	• Combined risks: Market Risk Exposure, Major Shift in Market Structure, Competitive Threats Environment, Term LNG Market & Credit Risk, Country Risk, Optimisation of BP Value Chain, and elements of Counterparty and cash risks	n/a	C6
Failure to deliver IST Operating Cash	• Combined risks: Commercial Impact from Loss of Group Liquidity, Failure to Deliver Annual Planned Cash flows, Counterparty Credit Risk, and Working Capital Optimisation	n/a	C6
Rogue Trader	• Continuation of ILA/Palantir rollout	B	C4
Cyber Risk	• Recognition that there is likely going to be a higher frequency of lower impact events	C	D6
Legal & Regulatory Compliance	• Redesigned Business Regulations risk	n/a	C6
Marine Transportation Exposure	• Reduction driven by safety improvements in the industry, embedding of ISM code requirements and the reduction in marine movements • IST Global Oil have also completed Major Accident Review (MAR) assessment and results support the change	A	A4
Onshore Transportation Exposure	• Combined Rail and Truck Transportation exposures	n/a	C4
Tax Risk	• No change	D	D7
Major Projects	• Combined risks: Engineering Procurement and Construction (EPC) Completion Risk, Freeport, and Coral FLNG	n/a	C2
Business Disruption	• No change	D	D6

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IST Risk Profile – Summary

Key Risk	Indicator	Range of value observed where application - YTD 2017
Market Risk	- Market Value at Risk (MVaR) - PnL stress - Cash stress - Drawdown and gain alerts - Net Present Value (NPV) - Net Present Value at Risk (NPVaR)	- \$15m – \$55m - Typically 2 – 15 times MVaR - Managed with Treasury - ~10 drawdown and ~30 gain alerts recorded - \$7bn as of end of Q2 2017 - \$3.3bn as of end of Q2 2017
Credit Risk	- Exposure - Expected loss (EL)	- \$8.6bn – \$12.8bn - \$20m – \$36m
Operational Risk	- BCP invoked in Houston before Harvey - Cyber incident resolution - Continuation of ILA/Palantir rollout - Move of Settlements to GBS (Budapest)	2 – 8 Cat A incidents per month 20 – 50 Cat B incidents per month No overdue audit findings actions

NAGP Houston BCP – Hurricane Harvey

BP's Westlake 1 Houston campus after Harvey

Dallas NAGP BCP Site

NAGP employees back at Helios on September 20th

August 23rd

NAGP BCP leadership requests BCP team to prepare for Dallas – IT&S staff start preparing the Dallas trading site.

WE of August 27th

Torrential rains lead to flooding across the city – BST activated on August 27th

September 6th

Hurricane Irma path watched

September 20th

- All NAGP staff in Helios
- 262 NAGP staff were at BCP
- BCP site hosted 14 staff from GOM and SOC
- Roughly 250 non-Helios staff in building

Aug. 23rd → Aug. 24th → Aug. 25th → Aug. 30th → Sept. 6th → Sept. 7th → Sept. 20th

August 24th

- **BCP activated; team travels to Dallas.**
- August 25th – BCP team starts work in Dallas.

August 30th

BP Houston campus is closed

September 7th

Water levels decrease and **restack plans start** for Helios Plaza and Westlake.

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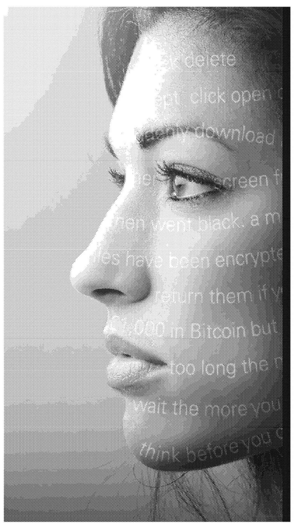
Cyber Incident



Actions taken during incident resolution

- Restricted server access
- Increased monitoring efforts
- Full analysis of all data sources and review of all possibilities of penetration by individuals both inside and outside the organisation
- Close partnership with NCA and FBI

Lessons learned from the incident

- High volume of unstructured data increases risks and makes monitoring more difficult
- Potential for increased monitoring and control

Extortion e-mail received → Internal investigation launched → Townhall recording received → **Insider threat suspected** → Additional data requested; Suspects reviewed and eliminated from enquiry → Individual identified FBI raid initiated

Further actions identified

- Enhance Information Security Framework
- Simplify IST's data footprint
- Improve coordination between Functions (HR, E&C, Legal, Business Integrity & Digital Security)
- Continue assessment of effectiveness of safeguards in place to protect IST's information – people, technology and data related controls
- Adoption of additional tools

Regulatory Developments

In the EU:

- Key areas of EU change impacting BP under MiFID II (go live 3 January 2018) and EMIR RTS (go live 1 November 2017):
  - Regulatory reporting simplification and implementation
  - Implementation of position limits
  - Legal entity change of permissions
- BP interaction with the FCA is strong with feedback in 2017 that IST is amongst the top quartile for firms reviewed by the FCA for Culture and Incentives. Recent meetings include an Annual Strategy meeting, a technology overview and a MiFID II program review

Redacted - First Amendment

In Singapore:

- Awaiting final MAS rules in relation to reporting requirements for commodity derivatives. It is expected that BP Singapore will be required to report OTC derivative transactions from November 2018

Appendix

Confidential

DRAFT
Floor Walk – Blockchain: Project Forcefield and BP Internal

Project Forcefield

- Create a fully digitalised cross industry back office platform
- Utilising distributed ledger technology and smart contracts
- First project to reach critical mass of market participants

BP Internal

- Exploring concept within BP Group

Forcefield Consortium – 12 Organisations

Majors (3)	Trading Houses (6)	Banks (3)
bp, Shell, Statoil	KOCH, GLENCORE, TRAFIGURA, Gunvor, Vitol, MERCURIA	ING, ABN·AMRO, SOCIETE GENERALE

	Approach	Vision
Project Forcefield	• Scoping review to evaluate anti-trust/competition issues, define product use cases, technology feasibility and potential 'NewCo' structure & governance • October investment proposal for 'Newco', that builds and operates platform, owned by the participants • Ppriority cases are the BFOE, ARA Barges and US crude ppipeline markets – and scale post implementation	• Eliminate operational inefficiencies in post trade execution • Reduce the deal lifecycle (including Working capital) • Minimise opportunities for fraud due to the confidential structure of interaction of participants on the block chain • A platform that is auditable, adaptable, flexible and provides significant value to incentivize market participation
BP Internal	• Integrate with Finance Modernisation agenda • Exploratory analysis and engagement initiated • WIP to develop business case and TOR	• Develop Blockchain for Group intercompany supply chain: — Operational process efficiencies — Eliminate intercompany reconciliations • Devise internal governance to facilitate cross business adoption

IST RMR 2017 – Worst Credible Assessment

Risk description

1 Rogue Trader

2 Legal & Regulatory Compliance

3 Failure to deliver Trading Performance (RCOP)

4 Failure to deliver IST Operating Cash

5 Marine Transportation Exposure

6 Onshore (Truck & Rail) Transportation Exposure

7 Tax Risk

8 Cyber Risk

9 Business Disruption

		Likelihood							
		1	2	3	4	5	6	7	8
	Qualitative Criteria	A similar event has not yet occurred in our industry and would only be a remote possibility	A similar event has not yet occurred in our industry	A similar event has occurred somewhere in our industry outside of BP	A similar event has occurred somewhere within BP	A similar event has occurred or is likely to occur within 30 years of 10 similar facilities, businesses or Functions	Event likely to occur once or twice within 30 years of the facility, business or Function	Event likely to occur several times within 30 years of the facility, business or Function	Common occurrence (at least annually) at the facility, business or Function
	Frequency per year / probability	$\leq 10^{-6}$	$>10^{-6}$ to 10^{-5}	$>10^{-5}$ to 10^{-4}	$>10^{-4}$ to 10^{-3}	$>10^{-3}$ to 10^{-2}	$>10^{-2}$ to 10^{-1}	$>10^{-1}$ to <1	≥ 1
Impact	A >$20 bn 100+ fatalities				5				
	B $5bn - $20bn 50+ fatalities								
	C $1bn - $5bn 10+ fatalities				1 6		2 3 4		
	D $100mn - $1bn 3+ fatalities						8 9	7	
	E $5mn - $100mn 1+ fatality								
	F $500k - $5m Days away from work case								
	G $50k - $500k 1+ recordable injury								
	H <$50k First aid								

Net Assessment *of potential impacts and associated likelihoods of a risk event reflecting assumptions, including the effectiveness of existing risk management measures.*

Worst Credible Impact: *Assessment of the most severe and plausible potential impacts of a risk event reflecting assumptions that include the credible failure of existing risk management measures.*

IST Balance Sheet – 2Q 2017

SEA Presentation

Balance Sheet

	$millions	Group	IST
	Non-current assets		
440	Property, plant and equipment	129,817	237
413	Goodwill	11,256	137
420	Intangible assets	18,366	469
	Investment in joint ventures	8,765	-
530	Investment in associates	15,484	430
	Other investments	1,011	47
540	Fixed assets	184,699	1,321
	Loans	550	112
555B	Trade and other receivables	1,448	113
575D	Derivative financial instruments	4,189	3,453
575B	Prepayments	1,022	38
	Deferred tax assets	4,883	-
535	Defined benefit pension plan surplus	1,162	-
616		197,953	5,036
	Current assets		
575L	Loans	259	97
545	Inventories	17,236	5,658
560	Trade and other receivables	21,004	6,709
575E	Derivative financial instruments	2,467	2,098
575A	Prepayments	1,092	27
555C	Current tax receivable	1,115	-
59520	Other investments	39	-
600	Cash and cash equivalents	23,794	-
615		67,006	14,590
6101000	Assets classified as held for sale	0	-
618		67,006	14,590
	Total Assets	264,959	19,626
	Current liabilities		
	Trade and other payables	37,548	11,547
634A	Derivative financial instruments	2,330	1,691
634B	Accruals	4,096	763
6306TOT	Finance debt	7,360	-
	Current tax payable	1,821	-
6309TOT	Provisions	2,971	110
639	**Total current liabilities**	56,126	14,111
	Liabilities directly associated with the assets classified as held for sale	0	-
		56,126	14,111
	Non-current liabilities		
	Other payables	13,067	91
664A	Derivative financial instruments	5,187	2,399
664B	Accruals	451	322
660F	Finance debt	54,472	-
682	Deferred tax liabilites	7,295	-
698	Provisions	20,272	320
	Defined benefit pension plan and otherpost-retirement benefit plan deficits	8,807	-
669		109,551	3,133
619	Total liabilities	165,677	17,244
	Net Inter-company balances		965
699	Net assets	99,282	3,348
	Equity		
	BP Shareholders' equity	97,640	
	Non-controlling interest	1,642	
		99,282	

Summary Balance Sheet

	$bn	% Group B/S
Fixed Assets	1.3	<1%
Inventory	5.6	~35%
Trade and Other Receivables and Payables	(4.8)	22%
Derivative fair value	1.5	>100%
Accruals	(1.1)	~23%
Other	(0.1)	<1%
Total excluding Inter-Company	**$2.4bn**	~2%
Net Inter-Company balances	1	-
Total Capital Employed	**$3.4bn**	~3%