

OIL PRICE INFORMATION SERVICE (“OPIS”) and IHS MARKIT BENCHMARK ADMINISTRATIONS LIMITED (“IMBA”), IHS MARKIT COMPANIES

Policies, processes and control activities
relating to oil price assessments and their
adherence with the International
Organization of Securities Commissions
 (“IOSCO”) Principles for oil price reporting
agencies (“PRAs”)

30 September 2020

DISCLAIMER – This report has been prepared to reflect how Oil Price Information Service, an IHS Markit Company, has applied the IOSCO Principles for oil price reporting agencies across its relevant oil price assessments and specifically to address principle 2.21. PwC has been selected to fulfil the requirements of principle 2.21 which requires *“an external auditor ... to review and report on the PRA’s adherence to its stated methodology criteria and with the requirements of the principles”*.

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Section I

Price Assessment Framework Overview

Policies, processes and control activities relating to oil price assessments and their adherence with the International Organization of Securities Commissions (“IOSCO”) Principles for oil price reporting agencies (“PRAs”)

Price Assessment Framework Overview

Introduction

The International Organization of Securities Commissions ("IOSCO") published the PRA Principles for oil price reporting agencies ("PRAs") on 5 October 2012. These were consequently endorsed by the G20 in November 2012. They cover governance, control, integrity and conflict management in relation to commodity price assessments published by PRAs. Principle 2.21 required adherence to the principles by the PRA with such adherence to be reviewed and reported on by an independent auditor by 5 October 2013 and subsequently on an annual basis.

This report has been prepared to fulfil the IOSCO requirement for Oil Price Information Service ("OPIS") to publish an annual assurance review in relation to price assessments. OPIS's in-scope price assessments are listed on pages 5 to 6 in Section I.

OPIS has provided a Response, contained within this report, as to how it has addressed the requirements set out in the PRA IOSCO Principles for oil price reporting agencies. PricewaterhouseCoopers LLP (PwC) has been appointed to provide independent assurance over this Response.

Principle 2.20 is not in-scope for this report as OPIS's Response to the principle is a statement of intention.

ABOUT OPIS and IMBA

OPIS, an IHS Markit Company, began covering petroleum news in 1977 with the launch of the Oil Express newsletter. In 1981, OPIS began providing spot price assessments for all refined products. In 2017, OPIS was acquired by Colorado-based IHS, which later merged with UK-based Markit to become IHS Markit. Today, OPIS's spot gasoline, diesel and jet fuel prices are benchmarked in the U.S. West Coast and other key markets. OPIS's refinery feedstocks and LPG prices are also considered a preferred benchmark by many U.S. and international traders.

OPIS consists of more than 60 information specialists that provide pricing assessments and inside analysis on what the trends mean and how they could affect prices and purchasing decisions. They are joined by customer service, sales, marketing, information technology and conference specialists, who strive to provide quality products and service to our customers.

IHS Markit Benchmark Administration Limited ("IMBA") is the appointed administrator of certain benchmarks owned by the IHS Markit group, as well as certain benchmarks owned by customers of the IHS Markit group that have appointed IMBA to act as independent administrator.

IMBA (the "Administrator") is regulated and authorized by the Financial Conduct Authority ("FCA") in the United Kingdom and has regulatory permission to administer benchmarks. IMBA received its authorization from the FCA on 5 July 2018.

The EU Benchmarks Regulation ("BMR") regulates indices used as benchmarks in certain financial instruments and financial contracts, as well as those used in the management and performance measurement of certain investment funds. BMR came into force on 30 June 2016 and Benchmark Administrators were able to complete applications for authorisation from 1 January 2018.

In December 2019, the European Securities Markets Authority ESMA issued guidance that “pursuant to Article 19 of the BMR, for those commodity benchmarks applying Annex II of the BMR instead of Title II of BMR, ESMA considers that an annual review of IOSCO principles for PRAs by an independent external auditor is sufficient to ensure compliance with paragraph 18 of Annex II of BMR.” Since the OPIS benchmarks in scope for BMR all fall under Annex II of the BMR, this IOSCO report is intended also to fulfil the requirements of an annual assurance review under the BMR. To support this, OPIS has integrated management responses concerning IMBA controls and procedures to monitor the performance of the outsourcing agreement into the overall report.

PRICE ASSESSMENT OVERVIEW

The OPIS price assessment division comprises over 60 editors working in Gaithersburg, MD, U.S., across the U.S., Singapore, and the U.K.

The spot price assessment division is divided into departments separated by product type and geographical area:

- U.S. – Refined Products
- U.S. – Renewable Fuels
- U.S. – Natural Gas Liquids
- Europe – Natural Gas Liquids
- PetroChem Wire
- IHS Chemical/Aromatics
- Agribusiness/Fertecon

Each division of the price assessment department is overseen by an executive editor who reports to the Vice President of Strategic Content, who in turn reports to the OPIS Chief Operating Officer (“COO”).

In-scope Price Assessments

The relevant methodologies and price assessments within the scope of this report (under both OPIS and IMBA’s responses to the IOSCO Principles) are:

Category 1 price assessments*:

U.S. – West Coast Refined Products

LA CARB Diesel

LA CARBOB Gasoline

LA Jet

U.S. – Natural Gas Liquids

Conway Natural Gasoline
Conway Normal Butane
Conway Physical Propane In-Well
Conway Propane
Mt Belvieu LDH Iso-Butane
Mt Belvieu Normal Butane LDH
Mt Belvieu Physical Ethane
Mt Belvieu Physical LDH Propane
Mt Belvieu Physical Natural Gasoline
Mt Belvieu Physical Non-LDH Propane
Mt Belvieu Physical Normal Butane
Mt Belvieu NGL Basket Non-TET

Europe – Natural Gas Liquids

Propane ARA CIF

U.S. – Renewable Fuels

Ethanol D6 RINs
Biomass Based Diesel D4 RINs

Carbon

California LCFS Credit Price
California Carbon Allowance (CCA)

U.S. – Midwest Refined Products

Group 3 ULSD X Grade
Group 3 Sub-Octane Gasoline V-Grade

PetroChem Wire

Ethylene - Mt Belvieu NOVA

Ethylene - Choctaw

Polymer Grade Propylene - Mt Belvieu EPC

High Density Polyethylene Blow Mold Grade - FOB Houston

Linear Low Density Polyethylene Butene Grade - FOB Houston

Homopolymer Polypropylene Raffia Grade - FOB Houston

Category 2 price assessments:**

Carbon

Regional Greenhouse Gas Initiative (RGGI)

Aromatics [RG1]

Benzene (Houston, TX basis)

Agribusiness/Fertecon

Urea - FoB Nola

Urea - FoB Egypt

* Category 1 price assessments – under the scope of reasonable assurance for the year 1 October 2019 to 30 September 2020.

** Category 2 price assessments – under the scope of limited assurance as at 30 September 2020.

OPIS methodologies are available on OPIS's website at: <http://www.opisnet.com/about/methodology>

Fertecon Methodology is available at: <https://cdn.ihsmarkit.com/www/pdf/0320/Fertecon-Price-Methodology.pdf> and;

Aromatics Methodology is available at: <https://cdn.ihsmarkit.com/www/pdf/0920/North-America-Aromatics-Methodology-Version-2-Sept-2020.pdf>

CONTROL ENVIRONMENT

COVID-19 Impact

OPIS runs a hybrid workforce with a considerable majority of the price reporting team working remotely. The impact of social distancing due to COVID-19 on editorial operations has been minimal as a result of this. Adequate technical support and resourcing enabled a relatively smooth transition of migrating 100% of the team to working remotely as the remainder of office-based staff worked from home as stipulated by company policy. There has been no discernable disruption in data inputs from market participants although face-to-face engagement has been replaced with teleconferences.

Overview

OPIS publishes news, fundamental data, pricing information, and other analysis for refined products, natural gas liquids and renewable fuels markets. OPIS's refined products, natural gas liquids and renewable fuels products and services include real-time news and market alerts, price assessments and indices, newsletters and reports, conferences and events.

Ownership and Executive Management

IHS Markit is the parent company of OPIS. OPIS's executive management team includes, among other executives:

- President, Fred Rozell;
- Chief Information Officer, Michael Sinsky;
- Chief Operating Officer, Linda Herbert; and
- Vice President, Strategic Content, Steve Tan.

OPIS is a division of IHS Markit, a global information company with its corporate headquarters located in London, UK.

The first tier of corporate oversight is provided by IHS Markit, which has a robust governance structure in place to ensure that all lines of business, including price reporting are conducted responsibly, effectively, and with due regard for all stakeholders' interests. IHS Markit requires that all employees adhere to its corporate policies, including the IHS Markit Business Code of Conduct. The IHS Markit Business Code of Conduct provides guiding principles as to how to appropriately conduct business and operate ethically. In addition, OPIS's legal and human resources functions are supported by IHS Markit. The second tier of corporate oversight is provided by IHS Markit Benchmark Administration Limited ('IMBA'), its administrator and a requirement under EU BMR. IMBA, in partnership with OPIS's executive management team, has overall responsibility for ensuring that OPIS has in place an effective compliance program. Additionally, the administrator; IMBA, is overseen by a committee known as the 'BOC'. The BOC discharges its obligations by obtaining management information from all businesses IMBA administers including OPIS. They are there to provide additional oversight, occasionally to approve changes in policy & procedure and challenge these changes if required.

Ownership Oversight

IHS Markit executive management is actively involved in the governance and oversight of OPIS and meet formally with OPIS executive management on a regular basis to review business and operational strategies as well as results of operations.

Code of Business Ethics and Conduct

A Business Code of Conduct has been established, which provides guidelines for employees to follow in the performance of daily business activities. The IHS Markit executive management team expects OPIS employees and officers to act with the highest standards of personal and professional integrity in all aspects of their employment and to comply with applicable laws, regulations and Company policies. All U.S. employees are required to reconfirm their Code of Conduct acknowledgement annually.

New OPIS employees are thoroughly screened to ensure their experience and skill set match the job position.

IHS Markit maintains a Business Code of Conduct hotline available to all employees who may wish to report a violation of the Code of Conduct or other ethical concern.

Training and Development

OPIS employs market assessors who are adequately trained and sufficiently experienced, including the ability to cover markets if a primary market assessor were to become unavailable. A table of editors cross-trained to work on spot markets other than their primary spot market is maintained and reviewed by the Vice President of Strategic Content and senior editors as needed to address coverage issues.

New and experienced spot market editors are required to comply with established spot market methodology and ethical training on a regular basis. Training and development incorporate an apprenticeship period and annual examinations for all spot market editors.

To ensure security of confidential information, new employees are required to take web-based security awareness training upon employment, and annually thereafter.

Policies and Procedures

OPIS uses a range of policies to ensure that, to the extent possible, its quality and integrity standards for market data are followed by its sources. OPIS spot market operating policies and procedures are incorporated into the IOSCO BMR Daily Tracking Manual that is centrally accessible on a drive to all spot market editors. The Manual integrates the PRA principles and is version-controlled with notifications of changes sent to all market assessors.

OPIS publishes on its website a Spot Market Compliance Policy that incorporates the IOSCO price reporting agency principles that is reflected in the IOSCO Daily Tracking Manual.

The IOSCO BMR Daily Tracking Manual and published Spot Market Compliance Policy provide specific policies and procedures for managing OPIS Spot Market desks including, but not limited to:

- Periodic internal and external review of published methodology;
- Changes to published methodology;
- Confirmation and scrutiny of reported transactions;
- Verification that sources are bona fide and approved;
- Logging excluded data with reason codes;
- Assessor training and qualifications;
- Supervision and monitoring of assessors;
- Required documentation and archived documents supporting all price assessments;
- Timely handling of corrections and complaints; and
- Conflicts of interest awareness, monitoring and responsiveness.

Along with OPIS's own policies their employees are subject to those policies produced and published by their administrator; IMBA:

- IMBA Compliance Manual
- IMBA Control Framework
- IMBA Conflicts of Interest Statement
- IMBA Complaints Handling Policy
- IMBA Changes and Cessations Policy
- IMBA Personal Account Dealing Policy

Segregation of Duties

OPIS functionally separates departments, job functions and system access that are incompatible with the spot market division or would create an appearance of a conflict of interest. The marketing and sales departments are separated from editorial (including market assessment) group. The marketing and sales departments have their own director-level senior staffers that are empowered to make individual decisions and report through separate leadership chains to the Global Head of Marketing and the Head of Global Energy and Natural Resources, respectively.

Independent Approvals

The OPIS spot market desks require independent review and approval of every published price assessment. The independent review and approval process is system-enforced by the spot assessment tool. The review and approval certify that assessments reflect OPIS methodology, documentary support, bona fide sources and concurrence on editor judgment. Where available, spot price assessment "deal logs" are reviewed by senior editors throughout the day prior to assessment publication to verify transactional data.

Monitoring Controls

A Customer Care team is responsible for performing ongoing monitoring activities. Through the assessment and testing activities, the Customer Care team ascertains that established recordkeeping requirements are met. All records and documentation supporting price assessments are kept within a central document repository and the spot assessment tool, in Instant Messenger ("IM") system logs, emails or in hardcopy reporter notebooks.

External Auditing

OPIS engaged PricewaterhouseCoopers LLP as its auditor with the signed and dated engagement contract retained by the individual responsible for OPIS's adherence to the principles.

The results of the engagement are published on OPIS's website at <http://notices.opisnet.com/iosco>.

Methodology and Approach

OPIS's spot pricing methodology is version-controlled and has been carefully crafted over the years with the goal of preserving market transparency. The senior editorial team have been approving OPIS's price assessment methodology since 1981 and all revisions in subsequent years. OPIS methodologies were chosen to be as reflective of the most liquid market activity with respect to size of cargo or shipment, volume of deal and timing. Through market participant consensus, OPIS methodologies are designed to be inclusive of all market data that fits OPIS published methodology parameters, including restrictions for inclusion of any market data that does not fit those same parameters.

OPIS's spot market editorial team and leadership regularly scrutinize the methodologies for clarity, relevance and comprehensiveness. The resulting price assessments are evaluated to ensure they are reliable indicators of market activity, are not distorted by out-of-methodology factors and are representative of the markets OPIS assesses. In weighing whether to accept or exclude submitted data, OPIS market assessors may consider external factors to shore up an assessment established by activity earlier in the day through market intelligence such as variances in production or cargo levels or by applying the test of repeatability.

To ensure consistency and integrity, all deals are weighed equally regardless of the size of the market participant. OPIS assigns equal weight to all market data submitted and deals confirmed based on its published methodology. In certain cases OPIS will prioritize deals in line with accepted market norms and published methodology on the principles of verifiability, accuracy and transparency.

Section II

OPIS's Directors' Statement of Adherence

OPIS Directors' Statement of Adherence

As the Directors of OPIS we are solely responsible for the preparation of this report and have designed, implemented, operated and monitored compliance with policies, process and control activities that adhere to the Principles for oil price reporting agencies published by the International Organization of Securities Commissions (the 'PRA Principles') for the in-scope Category 1 and 2 price assessments listed in Section I.

We are also responsible for this Statement of Adherence and OPIS's Response to the PRA Principles presented in this report including the policies, process and control activities designed to address the PRA Principles.

We confirm that:

For Category 1 price assessments:

- Section V of the accompanying report fairly presents OPIS's Response to the PRA Principles for Category 1 price assessments as at 30 September 2020; and
- The process and control activities identified in OPIS's Response over Category 1 benchmark price assessments have operated as described, throughout the period from 1 October 2019 to 30 September 2020.

For Category 2 price assessments:

- Section V of the accompanying report fairly presents OPIS's Response to the PRA Principles for Category 2 benchmark price assessments, as at 30 September 2020.



Steve Tan

VP Strategic Content

On behalf of Oil Price Information Service LLC, an IHS Markit Company

Date: 13 November 2020

Section III

IMBA's Directors' Statement of Adherence

IMBA's Directors' Statement of Adherence

As the Directors of IMBA we are solely responsible for the preparation of this report and have designed, implemented, operated and monitored compliance with policies, process and control activities that adhere to the Principles for oil price reporting agencies published by the International Organization of Securities Commissions (the 'PRA Principles') for the in-scope Category 1 and 2 price assessments listed in Section I.

We are also responsible for this Statement of Adherence and IMBA's Response to the PRA Principles presented in this report including the policies, process and control activities designed to address the PRA Principles.

We confirm that:

For Category 1 price assessments:

- Section V of the accompanying report fairly presents IMBA's Response to the PRA Principles for Category 1 price assessments as at 30 September 2020; and
- The process and control activities identified in IMBA's Response over Category 1 benchmark price assessments have operated as described, throughout the period from 1 October 2019 to 30 September 2020.

For Category 2 price assessments:

- Section V of the accompanying report fairly presents IMBA's Response to the PRA Principles for Category 2 benchmark price assessments, as at 30 September 2020.



Steve Tan

VP Strategic Content

On behalf of IHS Markit Benchmark Administration Limited, an IHS Markit Company

Date: 13 November 2020



Section IV

Independent Assurance Report



Independent Practitioner's Assurance Report to the Directors of Oil Price Information Service LLC ("OPIS") and IHS Markit Benchmark Administration Limited ("IMBA"), IHS Markit Companies, in respect of OPIS's and IMBA's Responses to the Principles for oil price reporting agencies

We have carried out an assurance engagement in respect of OPIS and IMBA (the "Companies") responses describing the policies, processes and control activities as set out in the middle column of Section V (the "Responses"), that have been put into place to adhere to the Principles for oil price reporting agencies published by the International Organization of Securities Commissions (excluding principle 2.20, the "PRA Principles") as at 30 September 2020 for both Category 1 and 2 price assessments as listed in Section I. In addition, for Category 1 price assessments, we also report on whether the process and control activities identified in the Companies' Responses have operated as described, throughout the period 1 October 2019 to 30 September 2020.

This report is made solely for the use and benefit to the Board of Directors in connection with Principle 2.21 of the PRA Principles. Our work has been undertaken in accordance with our agreement dated 30 June 2020 so that we might state to the Directors those matters we are required to state in an independent assurance report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Board of Directors and the Companies for our work, for this report, or for the opinion we have formed, save where terms have expressly been agreed in writing.

Respective responsibilities of OPIS and the Independent Practitioner

The Directors of OPIS and the Directors of IMBA are responsible for ensuring that their respective companies design, implement, operate and monitor compliance with policies, processes and control activities that adhere to the PRA Principles. They are also responsible for preparing the Directors' Statement of Adherence to the PRA Principles as set out in Section II and Section III and supported by the Companies' Responses to the PRA Principles in the middle column of Section V of this report.

Our responsibilities for this engagement are established in the United Kingdom by our profession's ethical guidance and are to undertake an assurance engagement and report in connection with the Companies' Responses to the PRA Principles, and in respect of the in-scope price assessments. In connection with the Category 1 price assessments, we report to you whether, in our opinion based on the results of our work (which is further described below), the Companies' Responses in Section V is fairly stated, in all material respects as at 30 September 2020 and whether the process and control activities therein have operated as described during the period 1 October 2019 to 30 September 2010. In connection with the Category 2 price assessments, we report to you whether, based on the results of our procedures, whether anything has come to our attention to indicate that the Companies' Responses to the PRA Principles, as at 30 September 2020 are not fairly stated, in all material respects.



Our Independence and Quality Control

In carrying out our work, we complied with the Institute of Chartered Accountants in England and Wales ("ICAEW") Code of Ethics, which includes independence and other requirements founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour and which is at least as demanding as Parts A and B of the IESBA Code related to assurance engagements. We also apply International Standard on Quality Control (UK) 1 and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our approach

We conducted our engagement in accordance with International Standard on Assurance Engagements 3000 (Revised) 'Assurance Engagements Other than Audits or Review of Historical Financial Information' issued by the International Auditing and Assurance Standard Board and with regard to the ICAEW's guidance within Technical Release Tech 02/14 FSF 'Assurance reports on benchmarks and indices'. Our engagement is comprised of both reasonable and limited assurance, as described further below.

The objective of an assurance engagement is to obtain such appropriate evidence as we consider sufficient to enable us to express our conclusions. The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent, than for a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Our engagement includes examination, on a test basis, of evidence relevant to assessing (i) the Companies' Responses to the PRA Principles, excluding Principle 2.20, for both Category 1 and Category 2 price assessments, and (ii) whether process and control activities have operated as described in respect of the Category 1 price assessments throughout the year 1 October 2019 to 30 September 2020. Our procedures are described in the Practitioner's Testing column in Section V of this report.

Our procedures were not sufficient to enable us to conclude on the suitability of design of the policies, processes or control activities in place to address the PRA Principles.

While the Companies' Responses may be informed by the need to satisfy legal or regulatory requirements, our scope of work and our conclusions do not constitute assurance over compliance with those laws and regulations.

Inherent limitations

The validity and reliability of price assessments is dependent on both (i) those who submit information to the PRA, for which the submitters are solely responsible, and (ii) the procedures performed by the PRA to analyse that information. Submitters of information are not subject to the PRA Principles and we are unable to comment on source data submitted by those parties. Because of their nature, process and control activities may not prevent or detect and correct all errors or omissions in submissions.

Process and control activities are subject to inherent limitations and, accordingly, errors or irregularities may occur and not be detected. Such processes and controls cannot guarantee protection against



(among other things) fraudulent collusion, especially on the part of those holding positions of authority or trust. Furthermore, our conclusions are based on historical information and the projection of any information or conclusions to any future periods would be inappropriate.

Conclusions

Reasonable assurance opinion in respect of Category 1 price assessments

In our opinion, based on the results of our procedures, in all material respects:

- The Companies' Responses to the PRA Principles as at 30 September 2020 are fairly stated; and
- The process and control activities identified in the Companies' Responses have operated as described, throughout the period 1 October 2019 to 30 September 2020.

Limited assurance conclusion in respect of Category 2 price assessments

Based on the results of our procedures, nothing has come to our attention to indicate that the Companies' Responses to the PRA Principles as at 30 September 2020 is not fairly stated in all material respects.

Other information

The information included in Section I describing the Companies' Overview, Corporate Structure and Governance, Reporting best practice and in-scope price assessments are presented by the Directors to provide additional information and is not part of the Companies' Responses to the PRA Principles. Such information has not been subjected to the procedures applied in the examination of the Companies' Responses to the PRA Principles, related to the reporting of price assessments, and accordingly, we express no opinion on it.

PricewaterhouseCoopers LLP

Chartered Accountants

London

13 November 2020

Section V

Principles, OPIS's and IMBA's Responses and
Practitioner's Testing

Principles, OPIS's and IMBA's Responses and Practitioner's Testing

Introduction

The table below sets out the OPIS's and IMBA's Responses in terms of how they adhere to each of the IOSCO principles, split into policy statements and process and control activities. The accompanying 'Practitioner's Response' summarizes the work performed by PwC to assess whether the policy statements and process and control activities summarized by OPIS and IMBA are reflective of working practices. This supports the assurance opinion as documented in Section IV.

Whilst OPIS's and IMBA's Responses are a combined response for all the selected price assessments in-scope, the Practitioner's Response is split into Category 1 (*) and Category 2 (**) price assessments, where necessary, to appropriately reflect the extent of work performed for each category, mainly in consideration that Category 1 and 2 price assessments are undergoing reasonable assurance and limited assurance reviews respectively.

The validation approach is summarized below:

OPIS's and IMBA's Responses	Practitioner's Testing		
	Category	Tagging	Validation Approach
Context	N/A	N/A	This section includes background information only and therefore was not validated
Policy Statements (PS)	Category 1	Category 1 – PS	Checked for existence of the policy or methodology in line with what has been described in OPIS's Response as at 30 September 2020
	Category 2	Category 2 – PS	Checked for existence of the policy or methodology in line with what has been described in OPIS's Response as at 30 September 2020
Process and Control Activities (PCA)	Category 1	Category 1 – PCA	Checked on a sample basis how a relevant activity has operated as described throughout the year 1 October 2019 to 30 September 2020
	Category 2	Category 2 [^] – PCA	Checked an example of how a relevant activity has been put in operation as described as at 30 September 2020

[^] For relevant activities that pertain to the organization and not specifically the Category 2 price assessments, testing was performed on a sample basis as part of the Category 1 testing.

Where:

*** Category 1:** Price assessments where PwC is providing reasonable assurance over both OPIS's and Response to the PRA Principles with respect to these price assessments as at 30 September 2020 and that any process and control activities related to the assessment of the price assessment have operated as described throughout the year from 1 October 2019 to 30 September 2020; and

**** Category 2:** Price assessments where PwC is providing limited assurance over OPIS's Response to the PRA Principles with respect to these price assessments as at 30 September 2020.

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
Quality and Integrity of PRA Methodologies		
Methodology		
<p>1.1 A PRA should formalize, document, and make public any methodology that it uses for a price assessment.</p>	<p>Context</p> <p>The relevant methodologies (the 'Methodologies') that cover the in-scope price assessments listed in Section I are as follows:</p> <ul style="list-style-type: none"> • West Coast Refined Products – US • Natural Gas Liquids – US • Europe LPG • US Renewables • Midwest Refined Products – US • Petrochemicals (PCW) • Agribusiness (Fertecon) • IHS Markit Chemicals <p>Policy Statement</p> <p>IMBA A Service Level Agreement (SLA) is in place between IMBA and its outsourced group entity, OPIS. The SLAs detail the roles and responsibilities of the outsourced entities and the review and monitoring processes which are in place to ensure IMBA has control over the provision of the benchmark.</p> <p>Process Control and Activities</p> <p>OPIS The Methodologies are formalised, documented and publicly available at:</p> <ul style="list-style-type: none"> • http://www.opisnet.com/about/methodology ; • https://cdn.ihsmarkit.com/www/pdf/0320/Fertecon-Price-Methodology.pdf; and • https://cdn.ihsmarkit.com/www/pdf/0920/North-America-Aromatics-Methodology-Version-2-Sept-2020.pdf <p>IMBA The BOC meet at least quarterly to perform Service Level Reviews and discuss all relevant information relating to the administration of the benchmark including but not limited to:</p>	<p>Category 1 and 2 – PS</p> <p>IMBA PwC inspected the SLA between IMBA and OPIS and noted that the details within the SLA are as described in IMBA's Response to Principle 1.1.</p> <p>Category 1 and 2 – PCA</p> <p>OPIS PwC observed the OPIS and IHS Markit external corporate websites and noted that the formal methodologies (the 'Methodologies') are publicly available.</p> <p>Category 1 and 2 – PCA</p> <p>IMBA PwC inspected a sample of BOC minutes and noted that they perform service level reviews and discuss relevant information relating to the administration of the benchmark including but not limited to:</p> <ul style="list-style-type: none"> • Cessation/creation of a benchmark; • Material changes to a benchmark methodology; and • Suspected misconduct by contributors or administrators. <p>PwC inspected BOC minutes and noted that the following IMBA policies and</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
	<ul style="list-style-type: none"> • Cessation/creation of a benchmark; • Material changes to a benchmark methodology; and • Suspected misconduct by contributors or administrators. <p>The BOC reviews at least annually the IMBA policies and procedures in place to ensure that applicable processes, policies and procedures are up to date and benchmarks are administered by IMBA in accordance with EU BMR. The policies include but are not limited to:</p> <ul style="list-style-type: none"> • IMBA Control Framework; • IMBA Complaints Handling Policy; • IMBA Conflicts of Interest Statement & Register; and • IMBA Compliance Manual. 	<p>procedures had been reviewed at least annually:</p> <ul style="list-style-type: none"> • IMBA Control Framework; • IMBA Complaints Handling Policy; • IMBA Conflicts of Interest Statement & Register; and • IMBA Compliance Manual.
<p>1.2 A methodology should aim to achieve price assessments which are reliable indicators of oil market values, free from distortion and representative of the particular market to which they relate.</p>	<p>Policy Statement</p> <p>OPIS The Methodologies require that OPIS produce price assessments which are reliable indicators of market values, free from distortion and representative of the particular market to which they relate.</p> <p>Please refer to Principle 1.3(a) to 1.3(h) below for additional detail on the content of the Methodologies. Please refer to Principle 1.4(a) for the rationale behind adopting the Methodologies.</p>	<p>Category 1 and 2 – PS</p> <p>OPIS PwC inspected the Methodologies and noted that they are each as described in OPIS's Response to Principle 1.2.</p>
<p>1.3 At a minimum, a methodology should contain and describe:</p> <p>a) All criteria and procedures that are used to develop an assessment including how the PRA uses the specific volume, concluded and reported transactions, bids, offers and any other market information(collectively 'market data') in its assessment and/or</p>	<p>Policy Statement</p> <p>OPIS The Methodologies contain and describe:</p> <p>a. All relevant criteria and procedures that are used to develop an assessment, including how it uses:</p> <ul style="list-style-type: none"> • The specified volume; • Concluded and reported transactions; • Bids and offers; and Any other market information (collectively "market data") in its assessment and/or assessment time periods. 	<p>Category 1 and 2 – PS</p> <p>OPIS PwC inspected the Methodologies and noted that they are each as described in OPIS's Response to Principle 1.3(a) to 1.3(h).</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
<p>assessment time periods (e.g., windows), why a specific reference unit is used (e.g., barrels of oil), how the PRA collects such market data, the guidelines that control the exercise of judgment by assessors and any other information, such as assumptions, models and/or extrapolation from collected data that are considered in making an assessment;</p> <p>b) Its procedures and practices that are designed to ensure consistency between its assessors in exercising their judgment;</p> <p>c) The relative importance that generally will be assigned to each criterion used in forming the price assessment (i.e., type of market data used, type of criterion used to guide judgment). [This is not intended to restrict the specific application of the relevant methodology but is to ensure the quality and integrity of the price assessment.]</p> <p>d) Criteria that identify the minimum amount of transaction data (i.e., completed transactions) required for a particular price assessment (the "transaction data threshold"). If no such threshold exists, the reasons why a minimum threshold is not established should be explained, including procedures where there is no transaction data;</p> <p>e) Criteria that address the assessment periods where the submitted data fall below the</p>	<p>The Methodologies also explain:</p> <ul style="list-style-type: none"> • why specific reference units are used; • how OPIS collects market data; and • any other information considered in making an assessment. <p>Please refer to Principle 1.3(b) below for information on the guidelines that control the exercise of judgment.</p> <p>b. The guidelines that control the exercise and judgment by reporters. The Methodologies state that assessing markets requires judgment on the part of editors, but that those calls are reviewed among experienced reporters and within the context of that day's market.</p> <p>c. The criterion used in the relevant price assessment in order of importance.</p> <p>d. The transaction data threshold for the relevant price assessments, or an explanation as to why there is no threshold.</p> <p>Please refer to Principle 1.3(c) below for information on the procedures to be followed when no transaction data exists.</p> <p>e. Detailed steps to be followed by the assessor where there is insufficient market data to meet the transaction data threshold for the relevant price assessments.</p> <p>For IHS Markit Chemicals (Aromatics), the following policy is applied: In the absence of firm bids, offers, and transactions, IHS Markit Chemicals will still poll market participants for expressions of interest to trade. Due to tight correlation between certain markets, IHS Markit Chemicals also tracks spread values in upstream feedstock, downstream products, coproducts, and alternative products. Other factors that can influence prices, such as supply/demand data, macroeconomic issues, and geopolitics, will also be filtered for market clarity. Accordingly, in certain assessments where insufficient market data</p>	

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<p>methodology's recommended transaction data threshold or the requisite PRA's quality standards, including any alternative methods of assessment (e.g., theoretical estimation models). Those criteria should explain the procedures used where no transaction data exists;</p> <p>f) Criteria for timeliness of market data submissions and the means for such submissions (e.g., electronically, via telephone, etc.);</p> <p>g) Criteria and procedures that address assessment periods where one or more reporting entity submits market data that constitute a significant proportion of the total data upon which the assessment is based (i.e., key submitter dependency). The PRA should also define in its criteria and procedures for what constitutes a "significant proportion" for each price assessment;</p> <p>h) Criteria according to which transaction data may be excluded from a price assessment.</p>	<p>exists, IHS Markit Chemicals analysts will exercise best judgment to quantify these relative values in the process of compiling the price index.</p> <p>The Methodologies detail that:</p> <ul style="list-style-type: none"> • spot market assessors are directed to use bids and offers to set a range in the absence of transactional data unless methodology requires otherwise; • for certain methodologies, allowances are made for using data from smaller volume transactions than minimums set out in the methodology on days of low liquidity; • for certain methodologies, bids and offers may move end-of-day ranges outside the demonstrated transactional range of the day; and • for certain methodologies, products with a more illiquid market, notional market values may be used based on formulaic calculations. These formulaic calculations are examined at least annually to ensure they remain relevant. <p>f. The forms in which market data will be accepted and the cut-off times for such data to be considered in that particular market.</p> <p>g. The requirements for its market assessors to conduct a broad canvass of the market each day so that OPIS is not "submitter dependent" on any one source for any single portion of data if possible.</p> <p>The criteria for the exclusion of transaction data, if relevant, as well as review requirements for judgments taken for such exclusions.</p>	
<p>1.4 A PRA should describe and publish the:</p> <p>a) Rationale for adopting a particular methodology, including any price adjustment techniques and a justification of why the time period or window within which market data is</p>	<p>Context</p> <p>A "material" change is defined as an alteration to the typical market activity brought on by either regulatory change or market supply/demand dynamics that alters, among other things, the assessed spot product's typical volume, mode of transportation,</p>	<p>Category 1 and 2 – PS</p> <p>OPIS PwC inspected the Methodologies and noted that they are each as described in OPIS's Response to Principle 1.4(a)</p>

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<p>accepted is a reliable indicator of physical market values;</p> <p>b) Procedure for internal review and approval of a given methodology, as well as the frequency of this review;</p> <p>c) Procedure for external review of a given methodology, including the procedures to gain market acceptance of the methodology through consultation with stakeholders on important changes to their price assessment processes.</p>	<p>commonly used nomenclature, chemical specification, trade liquidity or trading day hours.</p> <p>Policy Statement</p> <p>OPIS As noted in Principle 1.1, the methodologies are publicly available and describe the following, if applicable:</p> <p>a. The rationale for:</p> <ul style="list-style-type: none"> • Regularly scheduled open season for comments; • Adopting a particular methodology; • Any price adjustments techniques, if applicable; and • Justification of why the time window within which market data is accepted is a reliable indicator of physical market values. <p>b. Methodologies are reviewed internally at least annually, or pertinent sections are reviewed whenever there is a material change to the physical market being assessed.</p> <p>c. The procedure for external review of a particular methodology, including the process to gain market acceptance through consultation with stakeholders.</p> <p>Additionally, the Methodologies require OPIS to conduct a regularly scheduled "open season" on the Methodologies. When a methodology change is contemplated, OPIS reaches out to stakeholders. Consultations about methodology changes will generally be open for 4 weeks, except in exceptional circumstances where the Administrator decides that a shorter or longer consultation period is warranted.</p>	<p>to 1.4(c).</p> <p>IMBA PwC inspected the IHS Markit Benchmark Changes and Cessations Policy and noted that it is as described in IMBA's Response to Principle 1.4(b) and 1.4(c).</p> <p>Category 1 and 2 – PCA</p> <p>IMBA PwC observed the IHS Markit external corporate websites and noted that the IHS Markit Benchmark Changes and Cessations Policy is publicly available.</p>

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	<p>IMBA b. and c.</p> <p>The IHS Markit Benchmark Changes and Cessations Policy details procedures for the orderly handling of material changes and terminations to benchmarks.</p> <p>Process and Control Activities</p> <p>IMBA The IHS Markit Benchmark Changes and Cessations Policy is documented and publicly available here: https://cdn.ihsmarkit.com/www/pdf/1119/imba-eu-changes-and-cessations-public-summary.pdf</p>	
<p>1.5 A PRA should adopt and make public to stakeholders explicit procedures and rationale of any proposed material change in its methodology. Those procedures should be consistent with the overriding objective that a PRA must ensure the continued integrity of its price assessments and implement changes for good order of the particular market to which such changes relate. Such procedures should:</p> <p>a) Provide advance notice in a clear timeframe that gives stakeholders sufficient opportunity to analyse and comment on the impact of such proposed changes, having regard to the PRA's assessment of the overall Circumstances;</p> <p>b) Provide for stakeholders' comments, and the PRA's response to those comments,</p>	<p>Policy Statement</p> <p>OPIS As described in Principle 1.4, OPIS has adopted and made public its procedures for any proposed material changes to the Methodologies. These procedures, which are detailed within the Methodologies, require OPIS to:</p> <p>a. Inform its customers, also known as stakeholders, of the review of the relevant price assessments of a material change to the methodology including details of the proposed change.</p> <p>b. The editorial leadership team provides those to the public as requested while honoring any commenters' requests for confidentiality.</p>	<p>Category 1 and 2 – PS</p> <p>OPIS PwC inspected the Methodologies and noted that they are each as described in OPIS's Response to Principle 1.5(a) and 1.5(b).</p>

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to be made accessible to all market stakeholders after any given consultation period, except where the commenter has requested confidentiality.		
<p>1.6 A PRA should engage in the routine examination of its methodologies for the purpose of ensuring that they reliably reflect the physical market under assessment. This should include a process for taking into account the views of relevant stakeholders.</p>	<p>Process and Control Activities</p> <p>OPIS The Methodologies are version-controlled.</p> <p>OPIS spot market assessors, senior editors and supervisory editors discuss any suggestions for methodology changes during spot market editors' meetings on an as-needed basis. These meetings are formally recorded. Records of these meetings, subjects covered and market assessors in attendance are kept in a central electronic file and are centrally available.</p> <p>The Methodologies are reviewed internally at least quarterly via a review of the Methodology-specific instruction manuals. They are scrutinized for clarity, relevance and comprehensiveness by market assessors and senior editors.</p> <p>OPIS issues a quarterly notice of an "open season" on its Methodologies, encouraging all stakeholders to comment on the Methodologies and to suggest changes, ask questions or request additions.</p> <p>At the end of the "open season," once all feedback, if any, has been received, OPIS spot market assessors, senior editors and supervisory editors during a spot market editors meeting, review the comments and discuss whether further alteration of the proposed change is warranted or not.</p> <p>IMBA All changes to the in-scope methodologies and any changes or cessations shall be documented in the monthly IMBA Board MI ("Management Information") and presented and reviewed by the Board and then the BOC.</p>	<p>Category 1 and 2 – PCA</p> <p>OPIS For each in-scope Methodology, PwC inspected the OPIS and IHS Markit external corporate website and noted that the Methodologies are version-controlled.</p> <p>Category 1 – PCA</p> <p>OPIS For a sample of spot market editors' meetings, PwC inspected the meeting minutes and noted that they included suggestions for methodology changes, the subjects covered and the assessors in attendance.</p> <p>For the sample of spot market editors' meeting above, PwC inspected screenshots of folder locations and noted that the meeting minutes are stored in a centrally available folder.</p> <p>For a sample of quarters, PwC inspected the in-scope "Grey Books" and noted that they had been reviewed by senior editors.</p> <p>For a sample of quarterly "open seasons", PwC inspected the public notice for each in-scope</p>

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		<p>methodology and noted that stakeholders were notified of the open season and any comments were reviewed at the end of the "open season" during a spot market editors meeting.</p> <p>Category 2 – PCA</p> <p><u>OPIS</u></p> <p>For an example of spot market editors' meeting per methodology, PwC inspected the meeting minutes and noted that they included suggestions for methodology changes, the subjects covered and the assessors in attendance.</p> <p>For the sample of spot market editors' meeting above, PwC inspected screenshots of folder locations and noted that the meeting minutes are stored in a centrally available folder.</p> <p>For the most recent quarter per methodology, PwC inspected the in-scope "Grey Books" and noted that they had been reviewed.</p> <p>For the most recent quarterly "open season" per methodology, PwC inspected the public notice for each in-scope methodology and noted that stakeholders were notified of the "open season" and reviewed at the end of the "open season" during a spot market editors meeting</p>

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		<p>that any comments were.</p> <p>Category 1 and 2 – PCA</p> <p><u>IMBA</u></p> <p>For a sample of changes to the in-scope methodologies and any changes or cessations, PwC inspected the monthly IMBA Board MI and noticed that the change or cessations were presented and reviewed by the Board and then the BOC.</p>
Quality and Integrity of Price Assessments		
<p>2.1 A PRA should take measures that are intended to ensure the quality and integrity of the price assessment process.</p>	<p>Context</p> <p>The policies and procedures around data submitters are included within the Methodologies.</p> <p>Policy Statement</p> <p><u>OPIS</u></p> <p>The Methodologies, where appropriate, outline measures intended to ensure the quality and integrity of the price assessment process. These key policies and practices include:</p> <ul style="list-style-type: none"> • Requiring the use of only approved sources; and • Encouraging data submitters to submit deal sheets from back office systems that illustrate the company's full trading activity for that day and the products traded, if applicable. <p>Process and Control Activities</p> <p>Approved source lists are kept in a centrally available folder.</p>	<p>Category 1 and 2 – PS</p> <p><u>OPIS</u></p> <p>PwC inspected the Methodologies and noted that it is as described in OPIS's Response to Principle 2.1.</p> <p>Category 1 and 2 – PCA</p> <p><u>OPIS</u></p> <p>For each in-scope methodology, PwC inspected screenshots of folder locations and noted that approved source lists are stored in a centrally available folder.</p>

Market Data used in Price Assessments

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<p>2.2 A PRA should:</p> <p>a) Specify with particularity the criteria that define the physical commodity that is the subject of a particular methodology;</p> <p>b) Utilize its market data, giving priority in the following order, where consistent with the PRA's approach to ensuring the quality and integrity of a price assessment:</p> <ol style="list-style-type: none"> 1. Concluded and reported transactions; 2. Bids and offers; 3. Other market information. <p>Nothing in this provision is intended to restrict a PRA's flexibility in using market data consistent with its methodologies. However, if concluded transactions are not given priority, the reasons should be explained as called for in 2.3(b).</p> <p>c) Employ sufficient measures designed to use market data submitted and considered in a price assessment, which are bona fide, meaning that the parties submitting the market data have executed, or are prepared to execute, transactions generating such market data and the concluded transactions were executed at arms-length from each other. Particular attention</p>	<p>Policy Statement</p> <p><u>OPIS</u></p> <p>a. The Methodologies, and training materials, specify the following criteria, where relevant, that define the physical commodity:</p> <ul style="list-style-type: none"> • Type of product; • Location; • Vessel type, if applicable; and • Delivery range. <p>Context</p> <p>Due to market-specific dynamics and characteristics, some methodologies place more emphasis on bids and offers than on reported transactions. For the methodologies to which this applies, OPIS provides the reasoning for this preference as part of the price assessment process within the methodology document.</p> <p>Policy Statement</p> <p><u>OPIS</u></p> <p>b. Except where otherwise specified, the Methodologies require that market assessors give priority in the following order to:</p> <ul style="list-style-type: none"> • Concluded and reported transactions; • Bids and offers; and • Other market information. <p>Where prescribed by methodology, OPIS market assessors give priority to done deals and if not, then assessment ranges set outside this priority scheme are reviewed and approved by a senior editor.</p> <p>c. The Methodologies, and training materials, where relevant, outline measures to be taken by assessors designed to ensure market data is bona fide. Such measures include:</p>	<p>Category 1 and 2 – PS</p> <p><u>OPIS</u></p> <p>PwC inspected the Methodologies and noted that they are each as described in OPIS's Response to Principle 2.2(a) to 2.2(e).</p> <p>Category 1 – PCA</p> <p><u>OPIS</u></p> <p>For a sample of price assessments, PwC inspected the nightly emails which were sent to customers and noted that they included the Data Submission policy.</p> <p>For a sample of price assessments, PwC inspected internal communications and price assessment calculations and noted that OPIS reporters performed cross-verification of data with multiple submitters.</p> <p>Category 2 – PCA</p> <p><u>OPIS</u></p> <p>For one example price assessment for each in-scope price assessment, PwC inspected the nightly emails or the final report which was sent to customers and noted that it included the Data Submission policy.</p>

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<p>should be made in this regard to inter-affiliate transactions;</p> <p>d) Establish and employ procedures to identify anomalous (i.e., in the context of a PRA's methodology) or suspicious transaction data and keep records of decisions to exclude transaction data from the PRA's price assessment process.</p> <p>e) Encourage parties that submit any market data ("submitters") to submit all of their market data that falls within the PRA's criteria for that assessment. PRAs should seek, so far as they are able and is reasonable, that data submitted are representative of the submitters' actual concluded transactions.</p> <p>f) Employ a system of appropriate measures so that, to the extent possible, submitters comply with the PRA's applicable quality and integrity standards for market data.</p>	<ul style="list-style-type: none"> • Cross-verification, when possible and appropriate; • Checking the identities of sources; • Referring to an approved source list; and • Sampling on a daily basis a broad cross-section of refiners, traders, marketers, brokers and end users active in buying, selling or trading physical barrels. <p>If cross-verification of received market data by the above means is not possible by deadline, market assessors exclude it and log the exclusion in the senior editor-reviewed data exclusion log.</p> <p>d. The Methodologies include procedures to identify anomalous or suspicious data and guidance for reporters on dealing with excluded data.</p> <p>e. The Methodologies include:</p> <ul style="list-style-type: none"> • Standards for the provision of information from market sources' back offices, when applicable. • The clear expectation that sources only provide data which meets the data standards sources need to follow. • The expectations for submitters to provide all of their market data and that this data is representative of the sources' actual concluded transactions. <p>Process and Control Activities</p> <p><u>OPIS</u></p> <p>e. The Data Submission criteria is flagged to known sources in each report.</p> <p>f. OPIS holds its data submitters to standards for completeness and veracity and communicates and verifies compliance with those standards through various methods.</p>	<p>For one example price assessment for each in-scope price assessment, PwC inspected evidence and noted that OPIS reporters performed cross-verification of data with multiple submitters.</p>

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	<p>When possible, reporters perform cross-validation of data as detailed in the methodology by verifying the data submission with other data submitters independent of the original source of information.</p> <p>Cross-validation may not be possible or called for depending on the strictures of publication deadline or if the data submitted was sourced from a regulated exchange.</p>	
<p>2.3 A PRA should describe and publish with each assessment, to the extent reasonable without delaying a price reporting deadline:</p> <p>a) A concise explanation, sufficient to facilitate a PRA subscriber's or market authority's ability to understand how the assessment was developed, including, at a minimum, the size and liquidity of the physical market being assessed (meaning the number and volume of transactions submitted), the range and average volume and range and average of price, and indicative percentages of each type of market data that have been considered in an assessment; terms referring to the pricing methodology should be included (e.g., "transaction-based", "spread-based" or "interpolated/extrapolated");</p> <p>b) A concise explanation of the extent to which and the basis upon which judgment (e.g., exclusions of data which otherwise conformed to the requirements of the relevant methodology for that assessment, basing prices on spreads or interpolation/extrapolation,</p>	<p>Context</p> <p>Market rationale explanations are not deemed necessary for inclusion if the assessment being discussed is not complex, the range and mean are self-explanatory and/or inclusion of a market rationale would be highly redundant with the subsequent market commentary text.</p> <p>Process and Control Activities</p> <p>OPIS a. and b.</p> <p>OPIS's daily price assessments are published alongside, where reasonable, useful and practical publication of high-level explanations of how that day's assessment was developed, and the extent and basis of judgments taken.</p>	<p>Category 1 – PCA</p> <p>OPIS For a sample of price assessments, PwC inspected the published reports and noted that they contained explanations of how that day's assessment was developed, and the extent and basis of judgments taken.</p> <p>Category 2 – PCA</p> <p>OPIS For one example price assessment for each in-scope price assessment, PwC inspected the published reports and noted that they contained explanations of how that day's assessment was developed, and the extent and basis of judgments taken.</p>

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or weighting bids or offers higher than concluded transactions etc.), if any, was used in establishing an assessment.		
Integrity of the Reporting Process		
<p>2.4 A PRA should:</p> <p>a) Specify the criteria that define who may submit market data to the PRA;</p> <p>b) Have quality control procedures to evaluate the identity of a submitter and any employee(s) of a submitter who report market data and the authorization of such person(s) to report market data on behalf of a submitter;</p> <p>c) Specify the criteria applied to employees of a submitter who are permitted to submit market data to a PRA on behalf of a submitter; encourage submitters to submit transaction data from back office functions and seek corroborating data from other sources where transaction data is received directly from a trader;</p> <p>d) Implement internal controls and written procedures to identify communications between submitters and assessors that attempt to influence an assessment for the benefit of any trading position (whether of the submitter, its employees or any third party), attempt to cause an assessor to violate the PRA's rules or guidelines or identify submitters that engage in a pattern of submitting anomalous or suspicious transaction data.</p>	<p>Policy Statement</p> <p><u>OPIS</u> The Methodologies, and training materials, where relevant, contain and describe the following:</p> <ul style="list-style-type: none"> a. Any individual identified to the reporter as in possession of relevant market data and included on an approved list of data submitters may submit data to OPIS. b. Guidance for reporters to assist them in verifying data supplied to seek assurance that the submitter is genuine. c. Criteria applied to its sources. This information is included on OPIS's online methodology page. <p>Such criterion requires individuals who provide information to be identified to the reporter as in possession of relevant market data. Such data will only be accepted in line with cross-verification practices or come from back office deal sheets or a regulated exchange, if applicable, as stated in the Methodologies and Data Submission Criteria.</p> <p>Process and Control Activities</p> <p><u>OPIS</u> The criteria applied to its sources is included as a text paragraph alongside each price assessment.</p>	<p>Category 1 and 2 – PS</p> <p><u>OPIS</u> PwC inspected the Methodologies and training materials and noted that they are each as described in OPIS's Response to Principle 2.4(a) to 2.4(c).</p> <p>Category 1 – PCA</p> <p><u>OPIS</u> For a sample of price assessments, PwC inspected the nightly email and reports sent alongside the price assessment and noted that it contains a text paragraph of the criteria applied to its sources alongside each price assessment.</p> <p>Category 2 – PCA</p> <p><u>OPIS</u> For one example price assessment for each in-scope price assessment, PwC inspected the nightly email and reports sent alongside the price assessment and noted that it contains a paragraph of the criteria applied to its sources.</p>

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<p>Procedures should include provision for escalation by the PRA of inquiry within the submitter's company. Controls should include cross-checking market indicators to validate submitted information.</p>	<p>Policy Statement</p> <p><u>OPIS</u></p> <p>d. The Methodologies require that reporters make reasonable efforts to identify sources with the aim of ensuring the integrity of data received.</p> <p>The Methodologies, Data Submission Policy and training materials include criteria that states, where possible, that submitters should provide information from back office functions and for market assessors to make reasonable efforts to validate all data prior to use in an assessment.</p> <p>OPIS's training and internal procedures as set out across the IHS Markit Business Code of Conduct and the Methodologies detail the relevant actions reporters should take to validate submitted data to identify and isolate anomalous and patterns of suspicious transactions or should they feel unduly influenced. These criteria for inclusion or exclusion are:</p> <ul style="list-style-type: none"> • Does it adhere to OPIS's methodology regarding timing, size of deal, specification, volume? • Can it be verified? • Can it be repeated in the marketplace? • Can it be confirmed through either counterparties or independent market observers? • Does it come from a data submitter that is identifiable and verifiable as a bona fide source of market data? <p>The conflicts of interest policy contained within the IHS Markit Business Code of Conduct offers guidance to reviewers on signs of potential undue influence.</p>	<p>Category 1 and 2 – PS</p> <p><u>OPIS</u></p> <p>PwC inspected the Methodologies, Data Submitter Policy, IHS Markit Business Code of Conduct and training materials and noted that they are each as described in OPIS's Response to Principle 2.4(d).</p> <p>Category 1 – PCA</p> <p><u>OPIS</u></p> <p>For a sample of price assessments on the spot tool, PwC inspected the spot assessment tool audit log and Senior Editor Matrix and noted that it logs the editors' who submit the price assessment and the appropriate individual, per the Senior Editor Matrix, approves the price assessments to finalise their quality check of data.</p> <p>For a sample of price assessments, PwC inspected internal communications and price assessment calculations and noted that OPIS reporters performed cross-verification of data with multiple submitters.</p> <p>Category 2 – PCA</p> <p><u>OPIS</u></p> <p>For an example of price assessments for each in-scope price assessment on the spot tool, PwC inspected the spot</p>

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	<p>Process and Control Activities</p> <p>OPIS The quality of data is checked and reviewed by a senior editor prior to assessment publication, when available, through review of "deal logs" in U.S. West Coast Refined Product, U.S. Midwest Refined Product, U.S. Renewables, and U.S. Natural Gas Liquids markets, on-going conversations with the market assessors, cross-checking deal sheets with the approved source list and double-checking assessments against spot market assessor worksheets which are stored in a centrally available electronic database.</p> <p>Data that cannot meet the criteria for inclusion and is therefore excluded is logged on the electronic data exclusion log that is reviewed and signed off by a senior editor as required. This exclusion log is kept in a centrally available electronic folder.</p> <p>The approved data submitter list is maintained and made available to reporters via a centrally accessible folder.</p>	<p>assessment tool audit log and Senior Editor Matrix and noted that it logs the editors' who submit the price assessment and the appropriate individual, per the Senior Editor Matrix, approves the price assessments to finalise their quality check of data.</p> <p>For an example of price assessments for each in-scope price assessment not on the spot tool, PwC inspected the assessment workbook or emails and Senior Editor Matrix and noted that it documents the editors' who submit the price assessment and the appropriate individual, per the Senior Editor Matrix, approves the price assessments to finalise their quality check of data.</p> <p>For an example of price assessments for each in-scope price assessment, PwC inspected internal communications and price assessment calculations and noted that OPIS reporters performed cross-verification of data with multiple submitters.</p> <p>Category 1 and 2 – PCA</p> <p>OPIS For each in-scope methodology, PwC inspected screenshots of folder locations for a point in time within the period and noted the Assessor worksheet stored in a</p>

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		<p>centrally available folder.</p> <p>For each in-scope methodology, PwC inspected the data exclusion log and noted that excluded data was logged and reviewed.</p> <p>For the above noted data exclusion logs, PwC inspected screenshots of folder locations and noted that the exclusion logs are kept in a centrally available.</p> <p>For each in-scope methodology, PwC inspected screenshots of folder locations for a point in time within the period and noted that the data submitter lists are stored in a centrally available folder.</p>
<p>2.5 A PRA should adopt and have explicit internal rules and guidelines for selecting assessors, including their minimum level of training, experience and skills, as well as the process or periodic review of their competence.</p>	<p>Policy Statement</p> <p>OPIS OPIS's Internal Compliance Training Calendar 2019-2020 (the "Internal Compliance Training Calendar 2019-2020") details the training requirements for reporters.</p> <p>IHS Markit Objective and key results (OKRs) – questions and answers document (the "Objective and key results") details the frequency with which reporters must be subject to a performance review.</p> <p>OPIS's "Markets Editor" job specification details minimum levels of experience and skills required to be an assessor.</p>	<p>Category 1 and 2 – PS</p> <p>OPIS PwC inspected OPIS's Internal Compliance Training Calendar 2019-2020 (the "Internal Compliance Training Calendar 2019-2020") and noted that the training requirements for reporters are detailed.</p> <p>PwC inspected OPIS's Performance Management IHS Markit document (the "Objective and key results" document and noted the frequency with which reporters must be subject to performance review is detailed.</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
	<p>Process and Control Activities</p> <p>OPIS Version-controlled instruction manuals are maintained for each spot market assessment category and are made available to reporters in a centrally accessible folder.</p> <p>Job candidates are reviewed and if acceptable, hired by senior editors.</p> <p>The new joiner completes the initial induction orientation which is conducted by OPIS's parent company IHS Markit. This is followed by basic training on OPIS, its products and the markets it covers via an IOSCO orientation presentation. A certificate of the completion of this orientation is kept on file electronically in a centrally accessible electronic folder.</p> <p>The new joiner then receives market specific one-on-one training with a mentor/spot market assessor who is actively covering a spot product market.</p> <p>Unless transferred to a new market, existing spot market assessors are tested annually by a senior editor to gauge their level of understanding of the IOSCO Principles as well as the specifics of the market methodology they will be called on to use.</p> <p>Price assessor performance is further monitored through the assessment review and approval process.</p> <p>Corrections are logged centrally and reason codes are monitored via a quarterly root cause analysis performed by the Compliance Consultant for each market.</p>	<p>PwC inspected OPIS's "Markets Editor" job specification and noted that it details minimum levels of experience and skills required to be an assessor.</p> <p>Category 1 and 2 – PCA</p> <p>OPIS PwC inspected the "Grey Books" for each in-scope methodology and noted that they are version controlled and available to reporters in a centrally accessible folder.</p> <p>For the above noted sample, PwC inspected tests completed and interviews by new hires and noted that they were completed prior to the employee being hired by OPIS and recommended by senior editors. For the above noted sample of new joiners, PwC inspected evidence and noted that initial induction training and one-on-one training with a mentor was provided.</p> <p>For a sample of market assessors, PwC inspected tests and noted that annual suitability testing had been performed as described in OPIS's Response to Principle 2.5.</p> <p>PwC inspected screenshots of folder location and noted that the annual certificates of IOSCO orientation are stored in a centrally accessible electronic folder.</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
		<p>PwC observed that an internal performance management system is used to assess the performance of OPIS reporters on a quarterly basis.</p> <p>For a sample of quarters, PwC inspected the root cause analysis logs and noted that they had each been reviewed by the Vice President of Strategic Content.</p>
<p>2.6 A PRA should have arrangements to ensure its assessments can be produced on a consistent and regular basis.</p>	<p>Context</p> <p>The Methodologies and methodology specific "Grey Books" provide granular detail of how an assessment is made. Review policies detailed in the Methodologies seek to ensure consistency between reporters.</p> <p>Policy Statement</p> <p><u>OPIS</u> The OPIS Business Continuity Plan ("BCP") includes:</p> <ul style="list-style-type: none"> • Details of which other spot market assessors and senior editors should be contacted in case of an unexpected absence and how to contact them to ensure continuation of coverage; • A table of spot market editors trained to cover spot markets as a replacement or second replacement if required; • Contact details such as name, IM name, alternate email or telephone for each spot market editor and senior editor; • Instructions and procedures for ensuring live internet connectivity in case of emergency or sudden power or internet loss; and • Instructions for remote editing from locations outside OPIS's commercial structures. 	<p>Category 1 and 2 – PS</p> <p><u>OPIS</u> PwC inspected the OPIS Business Continuity plan ("BCP") and noted that it is as described in OPIS's Response to Principle 2.6.</p> <p>Category 1 and 2 – PCA</p> <p><u>OPIS</u> PwC inspected the "Grey Books" for each Methodology and noted that versioned instructional manuals called "Grey Books" are maintained for each spot market Assessment.</p> <p>For the above noted "Grey Books", PwC observed that they are made available to reporters in a centrally accessible folder.</p> <p>OPIS management noted that there were no instances of failed batch jobs and therefore PwC did not validate the follow up from failed jobs.</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
	<p>Process and Control Activities</p> <p>Version-controlled instructional manuals are maintained for each methodology.</p> <p>The instruction manuals and the BCP are made available to reporters in a centrally accessible folder.</p> <p>Please refer to Principle 2.5 for detail on the selection and training of market assessors. Please refer to Principle 2.7 for detail on the cross-training of market assessors and scheduling. Please refer to Principle 2.8 for detail on the supervision of market assessors</p> <p>Price assessments and supporting commentary are published to the OPIS connect site from the spot tools. Failed jobs and errors identified are monitored by the IT team.</p>	<p>PwC observed the dashboard and noted that it shows the successful and failed interface between the Spot tool and the Connect site.</p>
<p>2.7 A PRA should maintain continuity and succession planning in respect of its assessors in order to ensure that assessments are made consistently and by employees who possess the relevant levels of expertise.</p>	<p>Context</p> <p>OPIS editorial teams are designed to provide triple coverage for all markets reported, whereby ideally a minimum of three (3) editors are able to adequately cover each market.</p> <p>Process and Control Activities</p> <p><u>OPIS</u> OPIS editorial teams are in place to ensure continuity of coverage in the case of vacation or unexpected absence of the primary spot market reporter. Where required OPIS editors will be cross-trained across different markets to maintain the required level of coverage.</p> <p>A schedule of spot market coverage and assessment approval is kept in a centrally available folder and maintained on a rolling 2-week basis.</p> <p>For Fertecon, a monthly schedule of coverage is maintained and available on a shared drive.</p>	<p>Category 1 and 2 – PCA</p> <p><u>OPIS</u> For a sample of market assessors who are cross-trained PwC, inspected market specific competency examinations and noted that reporters are cross-trained on other spot markets.</p> <p>PwC observed that the schedule of spot market coverage and assessment approval for each in-scope methodology is kept in a centrally accessible electronic folder and maintained on a rolling 2-week basis.</p> <p>Category 2 – PCA</p> <p><u>OPIS</u> PwC observed that the schedule of spot market coverage and assessment approval for Fertecon is</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
		kept in a centrally accessible electronic folder and maintained on a rolling monthly basis.
Supervision of Assessors		
<p>2.8 A PRA should institute internal control procedures to ensure the integrity and reliability of assessments. At a minimum, such internal controls and procedures should require:</p> <p>a) The ongoing supervision of individual assessors to ensure that the methodology was properly applied;</p> <p>b) Procedures for internal sign-off by a supervisor prior to releasing prices for dissemination to the market.</p>	<p>Policy Statement</p> <p><u>OPIS</u> The IOSCO Compliance Daily Tracking Manual details the review and sign-off process for in-scope price assessments.</p> <p>Process and Control Activities</p> <p><u>OPIS</u> a. and b.</p> <p>Aromatics and Fertecon's standard operations require a review of assessments prior to publication by another editor. In the case of Fertecon, a weekly record of approvers and assessors is kept and monitored by senior management.</p> <p>For price assessments which use OPIS's spot assessment tool:</p> <ul style="list-style-type: none"> • The spot assessment tool logs, editors and senior editors' daily activities who submit, approve and publish spot price assessments; • The spot assessment tool is configured to prevent the same user ID to both input and approve the same price assessment; and • The spot assessment tool is configured to prevent an editor from changing an inputted and approved price. An approver must first un-approve the price assessment and re-approve after a revision is made. 	<p>Category 1 and 2 – PS</p> <p><u>OPIS</u> PwC inspected the IOSCO Compliance Daily Tracking Manual and noted that it is as described in OPIS's Response to Principle 2.8.</p> <p>Category 2 – PCA</p> <p><u>OPIS</u> For one example price assessment for each in-scope price assessment not on the spot assessment tool (Aromatics and Fertecon), PwC inspected the assessment workbook or emails and Senior Editor Matrix and noted that it documents the editors' who submit the price assessment and the appropriate individual, per the Senior Editor Matrix, approves the price assessments.</p> <p>For one example price assessments for each in-scope price assessment on the spot tool, PwC inspected the spot assessment tool audit log and Senior Editor Matrix and noted that it logs the editors' who submit the price assessment and the appropriate individual, per the Senior Editor Matrix,</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
		<p>approves the price assessments.</p> <p>Category 1 – PCA</p> <p><u>OPIS</u> For a sample of price assessments on the spot tool, PwC inspected the spot assessment tool audit log and Senior Editor Matrix and noted that it logs the editors' who submit the price assessment and the appropriate individual, per the Senior Editor Matrix, approves the price assessments.</p> <p>Category 1 and 2 – PCA</p> <p><u>OPIS</u> PwC inspected evidence and noted that the spot assessment tool is configured:</p> <ul style="list-style-type: none"> • to prevent the same user ID from both submitting and approving the same price assessment; and • to prevent users from changing an inputted and approved price, and that the users must first un-approve the price assessment and re-approve after a revision is made.

Audit Trails		
IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
<p>2.9 A PRA should have rules and procedures in place to document contemporaneously relevant information, including:</p> <p>a) All market data [that was used in the assessment];</p> <p>b) The judgments that are made by assessors in reaching each price assessment;</p> <p>c) Whether an assessment excluded a particular transaction, which otherwise conformed to the requirements of the relevant methodology for that assessment and the rationale for doing so;</p> <p>d) The identity of each assessor and of any other person who submitted or otherwise generated any of the above information.</p>	<p>Policy Statement</p> <p><u>OPIS</u> The IOSCO Compliance Daily Tracking Manual requires:</p> <p>a., b., c., and d.</p> <p>The creation and retention, on a contemporaneous basis, of all market data used in the assessment including whether judgment was utilized and whether any transactions were excluded including the rationale for exclusion.</p> <p>The retention of the identity of each assessor and of any other person who submitted or otherwise generated any of the above information.</p> <p>Process and Control Activities</p> <p><u>OPIS</u> In the case of Aromatics and Fertecon, records of all data submissions and gathered information relevant to assessments is kept by market assessors in a shared drive.</p> <p>OPIS's spot assessment tool logs editors' and senior editors' daily activities including who submits, approves and publishes spot price assessments.</p>	<p>Category 1 and 2 – PS</p> <p><u>OPIS</u> PwC inspected the IOSCO Compliance Daily Tracking Manual and noted that it is as described in OPIS's Response to Principle 2.9(a) to 2.9(d).</p> <p>Category 2 – PCA</p> <p><u>OPIS</u> PwC inspected the shared drive for Aromatics and Fertecon and noted that it contains records of all data submission and gathered information relevant to a price assessment.</p> <p>For an example price assessment for each in-scope price assessment that uses the spot assessment tool, PwC inspected the spot assessment tool audit log and noted that it recorded editors' and senior editors' daily activities including who submitted, approved and published spot price assessments.</p> <p>Category 1 – PCA</p> <p><u>OPIS</u> For a sample of price assessments that use the spot tool, PwC inspected the spot assessment tool audit log and noted that it recorded editors' and senior editors' daily activities including who submitted,</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
		approved and published spot price assessments.
<p>2.10 A PRA should have rules and procedures in place to ensure that an audit trail of relevant information is retained for at least five (5) years in order to document the construction of its assessments.</p>	<p>Policy Statement</p> <p><u>OPIS</u> OPIS's Record Retention policy (the "Record Retention policy"), as set out within the Methodologies, where applicable, requires that all relevant information, including market assessor notebooks, emails and instant messenger logs are retained for five (5) years.</p> <p>Process and Control Activities</p> <p><u>OPIS</u> For OPIS, on an annual basis the Project Manager Lead performs, evidences and signs off a documentation review of previously published price assessments within the scope of this assurance report. This review requires that, for a sample of dates, the Project Manager Lead can obtain all relevant documentation relating to the creation of the assessment and any subsequent complaints and recreate the price of published price assessments for at least five (5) years from 30 September 2015.</p> <p>For Fertecon, archives prior to acquisition by IHS Markit date back to 2015.</p> <p>OPIS uses a cloud based system to back-up its data and systems.</p> <p>Assessment communications including back office deal sheets, corrections logs, data exclusion logs and reporters' worksheets are kept in a centrally accessible folder for 5 years or since the price was implemented.</p> <p>Disaster recovery tests are performed each calendar year and reviewed by the Project Manager for IT.</p>	<p>Category 1 and 2 – PS</p> <p><u>OPIS</u> PwC inspected OPIS's Record Retention policy (the "Record Retention policy") and noted that it is as described in OPIS's Response to Principle 2.10.</p> <p>Category 1 and 2 – PCA</p> <p><u>OPIS</u> PwC inspected the letter of attestation by the Project Manager Lead and noted that the Project Manager Lead attested that the review had been performed.</p> <p>Category 2 – PCA</p> <p><u>OPIS</u> PwC inspected Fertecon's archive and noted that assessment communications were kept in a centrally accessible folder since 2015.</p> <p>Category 1 and 2 – PCA</p> <p><u>OPIS</u> PwC inspected monthly invoices with a cloud based system and noted that OPIS uses a cloud based system to back-up its data and system.</p> <p>PwC inspected the screenshot of assessment communications location and noted that assessment</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
		<p>communications were kept in a centrally accessible folder for over 5 years or since the price was implemented.</p> <p>PwC inspected the Disaster recovery test performed in 2019 and noted that the tests were performed each calendar year and reviewed by the Project Manager for IT.</p>
Conflicts of Interest		
<p>2.11 A PRA should document, implement and enforce comprehensive policies and procedures for the identification, disclosure, management and avoidance of conflicts of interest and the protection of integrity and independence of assessments. The policies and procedures should be kept up to date.</p>	<p>Policy Statement</p> <p><u>OPIS</u> The IHS Markit Business Code of Conduct (the "Business Code of Conduct") contains provisions for identification, disclosure, management and avoidance of conflicts of interest and the protection of integrity and independence of assessments.</p> <p><u>IMBA</u> The IHS Markit Benchmark Administration Limited Managing Conflicts of Interest Statement contains provisions for identification, disclosure, management and avoidance of conflicts of interest and the protection of integrity and independence of assessments.</p> <p>Process and Control Activities</p> <p><u>OPIS</u> All new employees are required to confirm that they have received, read and agree to adhere to the Conflicts of Interest policy and procedures set forth in the Business Code of Conduct.</p> <p>OPIS spot market assessors record the monetary value of gifts received from market participants in a centrally available "Gifts and Entertainment Log". New entries to the "Gifts</p>	<p>Category 1 and 2 – PS</p> <p><u>OPIS</u> PwC inspected the IHS Markit Business Code of Conduct (the "Business Code of Conduct") and noted that it is as described in OPIS's Response to Principle 2.11</p> <p><u>IMBA</u> PwC inspected the IHS Markit Benchmark Administration Limited Managing Conflicts of Interest Statement and noted that it is as described in IMBA's Response to Principle 2.11.</p> <p>Category 1 and 2 – PCA</p> <p><u>OPIS</u> For a sample of new joiners, PwC inspected declarations and noted that each new employee had declared that they had received, read and agree to adhere to the Conflicts of Interest policy and procedures.</p>



OPIS

By IHS Markit

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
	<p>and Entertainment Log" are reviewed by the Compliance Consultant.</p> <p>IMBA IMBA Conflicts of Interest Statement is published publicly: https://ihsmarkit.com/products/benchmark-administration-uk.html</p> <p>The IMBA Conflicts of Interest Statement is reviewed annually by Regulatory Compliance, provided to the IMBA Board and BOC for approval.</p> <p>IMBA relevant staff are required to attest to the Conflict of Interest Statement on an annual basis.</p> <p>IMBA Compliance maintains a Conflict of Interest register and reviews any Conflict of Interests logged.</p>	<p>PwC observed that the "Gifts and Entertainment Log" is stored in a centrally available folder. PwC inspected the "Gifts and Entertainment Log" and noted that entries had been reviewed by the Compliance Consultant.</p> <p>IMBA PwC observed the IHS Markit external corporate websites and noted that the IMBA Conflicts of Interest Statement is publicly available.</p> <p>PwC inspected the monthly IMBA Board MI and noted that the IMBA Conflicts of Interest Statement was presented and reviewed by the Board and then the BOC.</p> <p>For a sample of IMBA relevant staff, PwC inspected the individuals attestation and noted that the individual attest to the Conflict of Interest Statement on an annual basis.</p> <p>PwC inspected the Conflict of Interest Register and noted that there were no Conflicts of Interest logged. Therefore PwC have not performed validation procedures over the review of Conflict of Interests.</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
<p>2.12 At a minimum, those policies and procedures should [be designed to]:</p> <p>a) Ensure that price assessments are not influenced by the existence of, or potential for, a commercial or personal business relationship or interest between the PRA (or its affiliates), its personnel, clients, any market participant or persons connected with them;</p> <p>b) Ensure that PRA personnel's personal interests and business connections are not permitted to compromise the PRA's functions, including outside employment, travel, and acceptance of entertainment, gifts and hospitality provided by PRA clients or other oil market participants;</p> <p>c) Ensure, in respect of identified conflicts, appropriate segregation of functions within the PRA by way of supervision, compensation, systems access and information flows.</p> <p>d) Protect the confidentiality of information submitted to or produced by the PRA, subject to the disclosure obligations of the PRA;</p> <p>e) Prohibit PRA managers, assessors and other employees from contributing to a price assessment by way of engaging in bids, offers and trades on either a personal basis or on behalf of market participants.</p>	<p>Policy Statement</p> <p><u>OPIS and IMBA</u></p> <p>The compliance policy of IHS Markit is described and contained within the IHS Markit Business Code of Conduct, the IHS Markit Conflict of Interest policy, the IMBA Conflicts of Interest statement, the OPIS PRA Editorial Code of Conduct, and the IMBA Personal Accounts Dealing policy which require that:</p> <p>a. Price assessments are not influenced by the existence of, or potential for, a commercial or personal business relationship or interest between IHS Markit (or its affiliates), its personnel, clients any market participant or persons connected with them.</p> <p>b. OPIS price assessors must declare to their senior editor commercial, personal and business relationships which may affect their assessments immediately upon discovery.</p> <p>c. OPIS personnel's personal interests and business connections are not permitted to compromise OPIS functions, including outside employment, travel and acceptance of entertainment, gifts and hospitality provided by OPIS customers or other commodities market participants.</p> <p>d. In respect of identified conflicts, appropriate segregation of functions is created within OPIS by way of supervision, systems access and information flows.</p> <p>e. OPIS personnel must not at any time disclose any confidential information to anyone to whom such disclosure is not necessary for the purpose of accomplishing the person's work. Personnel are prohibited from discussing any confidential information with any unauthorized person outside of IHS Markit.</p>	<p>Category 1 and 2 – PS</p> <p><u>OPIS and IMBA</u></p> <p>PwC inspected IHS Markit Business Code of Conduct, the IHS Markit Conflict of Interest policy, the IMBA Conflicts of Interest statement, the OPIS PRA Editorial Code of Conduct, and the IMBA Personal Accounts Dealing policy and noted that it is as described in IMBA's and OPIS's Response to Principle 2.12(a) to 2.12(f).</p> <p>Category 1 and 2 – PCA</p> <p><u>IMBA and OPIS</u></p> <p>For a sample of spot market assessors, PwC inspected the individuals attestation and noted that the individual attest to the IHS Markit Personal Accounts Dealing policy and IMBA Conflicts of Interest policies annually.</p> <p>PwC inspected individuals with access to a centrally available document repository and noted that access was limited to those within OPIS or its contractors who either assess, approve, publish, support or monitor the compliance of the spot price assessment process.</p> <p>For a sample of new joiners to the Spot tool, PwC inspected evidence and noted that access was granted following passing training and approval by</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
<p>f) Effectively address identified conflicts of interest which may exist between its price assessment business (including all staff who perform or otherwise participate in price assessment responsibilities), and any other business of the PRA.</p>	<p>f. OPIS personnel are prohibited from contributing to a price assessment by way of engaging in bids, offers and trades on either a personal basis or on behalf of market participants.</p> <p>Identified conflicts of interest which may exist between OPIS price assessment business (including all staff who perform or otherwise participate in price assessment responsibilities), and any other business of IHS Markit or its affiliates are addressed.</p> <p>Process and Control Activities</p> <p>a. Each spot market assessor must sign and attest to the IHS Markit Personal Accounts Dealing policy and IMBA Conflicts of Interest policies annually.</p> <p>b. Please refer to Principle 2.11 for details on how OPIS ensures that its personnel's personal interests and business connections are not permitted to compromise OPIS's functions.</p> <p>c. Access to a centrally available document repository is limited to those within OPIS or its contractors who either assess, approve, publish, support or monitor the compliance of the spot price assessment process.</p> <p>Access rights to the Spot tools are granted following passing training and approval by manager for appropriate market and level of access.</p> <p>Leavers access to the Spot Tools is removed by IT upon the completion of leavers form by the Manager in a timely manner.</p> <p>Admin access to the Spot Tools is restricted to those who work in IT, Customer Service and Business Operations departments.</p> <p>The Spot Approver Matrix, which illustrates approvers with access to the different Markets are reviewed and approved by senior editors</p>	<p>manager for appropriate market and level of access.</p> <p>For a sample of leavers, PwC inspected evidence and noted that access to the Spot Tools is removed by IT upon the completion of leavers form by the Manager in a timely manner.</p> <p>PwC inspected the individuals with admin access to the Spot Tools and noted that access is restricted to those who work in IT, Customer Service and Business Operations departments.</p> <p>PwC inspected evidence and noted that the Spot Approver Matrix was reviewed and approved by senior editors on an at least annual basis.</p> <p>For a sample of changes to the spot assessments tools, PwC inspected the change forms and noted that changes are tested and approved by senior editorial leadership and selected senior customer service personnel before being migrated into production.</p> <p>Category 1 and 2 – PCA</p> <p>PwC inspected that the OPIS spot assessment tool is password protected.</p> <p>PwC inspected the user access accounts in the Spot Assessment tool and noted</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
	<p>on an at least annual basis.</p> <p>Changes to the spot assessments tools are tested and approved by senior editorial leadership and select senior customer service personnel before being migrated into production.</p> <p>Please refer to Principle 2.15 for details on how OPIS ensures appropriate segregation of functions within OPIS.</p> <p>d. OPIS's spot assessment tool is password-protected, permission-based and the level of access is determined by department, status within that department and function within OPIS.</p> <p>e. All IHS Markit employees, including OPIS spot market assessors, must undergo and be certified annually in training that covers the IHS Markit Business Code of Conduct.</p> <p>f. Identified potential conflicts of interest are recorded on the reporter's individual performance management system record by editorial management and may result in immediate removal of that reporter from the market they are covering.</p>	<p>that accounts are permission-based determined by department, status with department and function within OPIS. For a sample of IHS Markit employees, PwC inspected employees training and noted that the employees are certified annually in training that covers IHS Markit Business Code of Conduct.</p> <p>OPIS management noted that no conflicts of interest were identified during the period under review and so there are no items to test. Therefore, PwC did not perform validation procedures over OPIS's response that conflicts of interest are recorded on the reporter's individual performance management system record by the Vice President of Strategic Content.</p>
2.13 There is no principle	Not applicable.	Not applicable.
2.14 A PRA should ensure that its other business operations have in place appropriate procedures and mechanisms designed to minimise the likelihood that conflicts of interest will affect the integrity of price assessments.	<p>Policy Statement</p> <p><u>OPIS</u> The Business Code of Conduct contains policies designed to minimize the likelihood of conflicts of interest.</p> <p>Process and Control Activities</p> <p><u>OPIS</u> The Business Code of Conduct is formalized, documented and publicly available at : https://investor.ihsmarkit.com/corporate-governance</p>	<p>Category 1 and 2 – PS</p> <p><u>OPIS</u> PwC inspected the Business Code of Conduct and noted that it is as described in OPIS's Response to Principle 2.14.</p> <p>Category 1 and 2 – PCA</p> <p><u>OPIS</u> PwC observed the IHS Markit external corporate website and noted that the Business Code of Conduct is publicly available.</p>

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<p>2.15 A PRA should ensure it has appropriate segregated reporting lines amongst its managers, assessors and other employees (as appropriate) and from the appropriate managers to the PRA's most senior level management and its Board (if any), designed to ensure (i) the PRA satisfactorily implements the requirements listed in these principles; and (ii) that responsibilities are clearly defined and do not conflict or cause a perception of conflict.</p>	<p>Policy Statement</p> <p><u>OPIS</u> OPIS uses an organizational structure to document reporting lines from board to employee level. The levels of editorial staff within the Editorial Spot market reporting division are: *Markets Editor, *Senior Editor, *Managing Editor, *Associate Director, *Director, *Executive Director.</p> <p>For Fertecon, the levels of editorial staff are: *Market Reporter, *Analyst, *Senior Analyst, *Principal Analyst and *Heads of Current Information.</p> <p>Process and Control Activities</p> <p><u>OPIS</u> The spot assessment tool is system enforced to ensure non-editorial departments including Sales, Production, Marketing, etc. are not permissioned to assess or approve market assessments, corrections or data exclusions with the exception of the Operations department and specified Information Technology staff who require access to develop, test and monitor the platform.</p> <p>For OPIS Aromatics (included in Petrochemicals), assessments are entered by market assessors in the IHS Connect system which is permission-based.</p> <p>For Fertecon, new employees request access to the price input system from IT and a senior editor approves or denies that request.</p>	<p>Category 1 and 2 – PS</p> <p><u>OPIS</u> PwC inspected the organizational structure, and noted that the Editorial department operates with its own line management reporting structure with six levels of staff from board to employee level, as outlined in OPIS's response to Principle 2.15.</p> <p>PwC inspected the Fertecon organizational structure and noted that the Editorial department operates with its own line management reporting structure with five levels of staff from board to employee level, as outlined in OPIS's response to Principle 2.15.</p> <p>Category 1 and 2 – PCA</p> <p><u>OPIS</u> PwC inspected the spot assessment tool access list and noted that permissions within the tools are as described in Principle 2.15</p> <p>PwC inspected the user access accounts in the IHS Connect System and noted that accounts are permission-based.</p> <p>For a sample of new employees to Fertecon, inspected evidence and noted that access to the system is requested from IT and a senior editor approved the request.</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
<p>2.16 A PRA should disclose to its stakeholders as soon as it becomes aware of a conflict of interest arising from the ownership of the PRA.</p>	<p>Context</p> <p>IHS Markit corporate counsel coordinates with IHS Markit executive management to ensure conflicts of interest arising from ownership are identified and disclosed.</p> <p>Process and Control Activities</p> <p>OPIS OPIS discloses in writing to the relevant price assessments stakeholders within five (5) working days of becoming aware of a conflict of interest arising from ownership.</p> <p>IMBA On an annual basis, Regulatory Compliance conduct an annual review to ensure that both the IMBA Board and BOC remain structurally free of conflicts of interest.</p> <p>Please refer to Principle 2.11 above for process and control activities for IMBA relevant staff attestation to IMBA Conflicts of Interest Statement.</p>	<p>Category 1 and 2 – PCA</p> <p>IMBA's and OPIS's management noted that there were no instances of conflicts of interest during the period under review and so there are no items to test. Therefore, PwC did not perform validation procedures over OPIS's disclosure procedures on becoming aware of conflict of interests.</p>
Complaints		
<p>2.17 A PRA should have in place and publish written procedures for receiving, investigating and retaining records concerning complaints made about a PRA's assessment process.</p>	<p>Policy Statement</p> <p>IMBA and OPIS The IHS Markit Benchmark Administration Complaints Handling Policy details procedures for dealing with complaints.</p> <p>Process and Control Activities</p> <p>IMBA and OPIS OPIS follows the IHS Markit Benchmark Administration Complaints Handling Policy, which can be found online at: https://www.opisnet.com/about/methodology/ And here: https://ihsmarkit.com/Info/0518/index-regulation.html.</p>	<p>Category 1 and 2 – PS</p> <p>IMBA and OPIS PwC inspected IHS Markit Benchmark Administration Complaints Handling Policy and noted that it is as described in IMBA's and OPIS's Response to Principle 2.17.</p> <p>Category 1 and 2 – PCA</p> <p>IMBA and OPIS PwC observed the OPIS external corporate website and noted that the Complaints Policy is publicly available.</p>

IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
<p>2.18 Among other things, such complaint mechanisms should [be designed to] ensure that:</p> <p>a) A PRA should have in place a mechanism detailed in a written complaints handling policy, by which its subscribers may submit complaints on whether a specific price assessment is representative of market value, proposed price assessment changes, applications of methodology in relation to a specific price assessment and other editorial decisions in relation to price assessment processes;</p> <p>b) A PRA should ensure that its written complaints handling policy includes, among other things, the process and target timetable for handling of complaints;</p> <p>c) Formal complaints made against a PRA and its personnel are investigated by that PRA in a timely and fair manner;</p> <p>d) The inquiry is conducted independently of any personnel who may be involved in the subject of the complaint;</p>	<p>Policy Statement:</p> <p><u>IMBA and OPIS</u> On an at least annual basis, the Regulatory Compliance Officer will review all complaints submitted under this policy to determine the existence of any trends. This Complaints Handling Policy shall be reviewed by the Administrator's Board at least annually. The Regulatory Compliance Officer's review of trends and the reviewed policy shall be approved by the Benchmark Oversight Committee.</p> <p>Process & Control Activities:</p> <p><u>IMBA and OPIS</u> For a complaint to enter the formal complaints handling process, the complainant must record the complaint in writing, explaining as fully as possible the background to the complaint, and attaching all relevant materials or evidence where appropriate. The complaint should be sent to:</p> <p>IHS Markit Benchmark Administration Ltd. Ropemaker Place, 25 Ropemaker Street London EC2Y 9LY Email: complaints_indices@markit.com</p> <p>Context Complaints may be submitted in relation to any aspect of benchmark administration by the Administrator, including:</p> <ul style="list-style-type: none"> • Whether a specific benchmark determination is representative of market value; • On a proposed change to a benchmark determination process; • On an application of the methodology in relation to a specific benchmark determination; and 	<p>Category 1 and 2 – PCA</p> <p><u>IMBA and OPIS</u> PwC inspected the IHS Markit Benchmark Administration Complaints Handling Policy and noted that it is as described in IMBA's and OPIS's Response to Principle 2.18.</p> <p>Category 1 and 2 – PCA</p> <p><u>IMBA and OPIS</u> IMBA and OPIS management noted that there were no complaints within the period of review and so there were no items to test. Therefore, PwC did not perform validation procedures over complaints relating to in-scope price assessments and escalation to the BOC.</p> <p>For a sample of monthly IMBA MI minutes, PwC inspected the minutes and noted that no complaints raised were presented to the BOC.</p> <p>PwC inspected the IMBA MI minutes and confirmation emails from the IMBA board and noted that the IMBA Complaints Handling Policy was reviewed annually by the Regulatory Compliance and provided to the Board and BOC for approval.</p> <p>IMBA and OPIS management noted that there were no complaints within the period of review</p>

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<p>e) A PRA aims to complete its investigation promptly;</p> <p>f) A PRA advises the complainant and any other relevant parties of the outcome of the investigation in writing and within a reasonable period;</p> <p>g) There is recourse to an independent third party appointed by the PRA should a complainant be dissatisfied with the way a complaint has been handled by the relevant PRA or the PRA's decision in the situation no later than six (6) months from the time of the original complaint;</p> <p>h) All documents relating to a complaint, including those submitted by the complainant as well as a PRA's own record, are retained for a minimum of five (5) years.</p>	<ul style="list-style-type: none"> On other decisions in relation to the benchmark determination process. If an employee of the Administrator (or an affiliate of the Administrator) receives an enquiry from a stakeholder which is not formally stated to be a complaint but could be regarded as such, the employee should make the stakeholder aware of this Complaints Policy. <p>Process and Control Activities</p> <p>IMBA and OPIS b., c., d., and e.</p> <p>Upon receipt of a complaint, the Regulatory Compliance Officer will undertake the following steps:</p> <ul style="list-style-type: none"> Acknowledge receipt of the complaint in writing 2 business days; Document the receipt of the complaint in the Administrator's Complaint Register; Investigate the complaint in a timely and fair manner. The investigation will be conducted independently of any personnel who may be or may have been involved in the subject matter of the investigation; Determine whether further escalation to the Board of the Administrator or the Benchmark Oversight Committee is required; If the Regulatory Compliance Officer determines that escalation is required, the complaint will be referred to and discussed with the Board of the Administrator or, if a Board member is the subject of the complaint, the Benchmark Oversight Committee. The complainant will be advised of this escalation; and The complainant will be advised of the final outcome of the investigation within 60 calendar days, unless such communication would be contrary to the objectives of public policy or the European Market Abuse Regulation (Regulation (EU) No 596/2014). If circumstances warrant a longer time period, the complainant will be informed. 	<p>and so there were no items to test. Therefore, PwC did not perform validation of the Regulatory Compliance Officer's review of trends.</p>



OPIS

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IOSCO Principle	OPIS's and IMBA's Response	Practitioner's Testing
	<p>f. In respect of commodity benchmarks only, if a complainant is dissatisfied with the way a complaint has been handled or the decision in the situation, the complainant may, within six months, request that the complaint is referred to an independent third party appointed by the Administrator.</p> <p>g. All documents relating to a complaint, including those submitted by the complainant, will be retained for at least five years.</p> <p>Complaints will also be tracked in monthly IMBA Board MI and presented to the BOC.</p> <p>This Complaints Handling Policy shall be reviewed by the Administrator's Board at least annually. The Regulatory Compliance Officer's review of trends and the reviewed policy shall be approved by the Benchmark Oversight Committee.</p>	
<p>2.19 Disputes as to daily pricing determinations, which are not formal complaints, shall be resolved by the PRA with reference to its standard appropriate procedures. If a complaint results in a change in price, that should be communicated to the market as soon as possible.</p>	<p>Policy Statement</p> <p><u>IMBA</u> The IHS Markit Benchmark Administration Price Assessments Correction Policy details what constitutes as a correction and the procedure for dealing with corrections. Where a complaint results in a change in price, that price is communicated to the market as soon as possible.</p> <p>Process and Control Activities</p> <p><u>IMBA and OPIS</u> For Process and Control Activities relating to Complaints please see Principle 2.18.</p> <p>A potential correction (realised internally or externally) is approved by the market editor responsible for the Service, a correction is drafted by the market editor who assessed the market in question.</p>	<p>Category 1 and 2 – PS</p> <p><u>IMBA</u> PwC inspected the IHS Markit Benchmark Administration Price Assessments Correction Policy and noted that it is as described in IMBA's Response to Principle 2.19.</p> <p>Category 1 and 2 – PCA</p> <p><u>IMBA and OPIS</u> For a sample of corrections, PwC inspected evidence and noted that the corrections were approved and drafted by the market editor who assessed the market.</p>

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	<p>That corrections draft is reviewed by a direct supervisor or senior manager who validates it for accuracy and publishes the correction through the same delivery channels as the publication of the original assessment.</p> <p>The number, details and underlying root causes of corrections issued will be reported to the Administrator and BOC.</p>	<p>For the sample of corrections noted above, PwC inspected evidence and noted that the correction was reviewed by a direct supervisor or senior manager prior to publication</p> <p>For the sample of corrections noted above, PwC inspected the IMBA MI pack and noted that the number, detail and root cause was reported to the Administrator and BOC.</p>
Cooperation with Regulatory Authorities		
<p>2.20 Audit trails, other documentation required by these principles and all other relevant information shall be readily available to market authorities in carrying out their regulatory duties and handed over without delay in accordance with applicable law.</p>	<p>OPIS and IMBA maintains audit trails and other documentation as required by these principles.</p> <p>OPIS and IMBA seeks to comply with all applicable laws.</p>	<p>Excluded from scope of Independent Assurance</p>
External Auditing		
<p>2.21 A PRA should appoint an independent, external auditor with appropriate experience and capability to review and report on the PRA's adherence to its stated methodology criteria and with the requirements of the principles. The first resulting audit should be completed within one year of the publication of the principles by IOSCO and its results published within fifteen months of the publication of the principles. Subsequent audits should take place annually and be published three months after each audit is completed with further interim audits carried out as appropriate.</p>	<p>OPIS and IMBA has engaged PricewaterhouseCoopers LLP to carry out an assurance review of OPIS's policies, processes and control activities relating to oil price assessments and how these policies, processes and control activities adhere to the PRA Principles.</p>	<p>This principle is covered by this report.</p>

