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DOI:
10.1093/jwelb/jwad013

Document Version
Publisher's PDF, also known as Version of record

Citation for published version (Harvard):
Faccia, A 2023, 'Self-assessment toolkit for energy anti-money laundering: unveiling key lessons from high-profile case studies', *The Journal of World Energy Law & Business*, vol. 16, no. 5, jwad013, pp. 387–413. https://doi.org/10.1093/jwelb/jwad013

Journal of World Energy Law and Business, 2023, **00**, 1–27
https://doi.org/10.1093/jwelb/jwad013
Article

Self-assessment toolkit for energy anti-money laundering: unveiling key lessons from high-profile case studies

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ABSTRACT

Money laundering is pervasive across industries, including the energy sector. This article examines nine high-profile money laundering cases in the energy industry from anti-money laundering (AML) perspective. By analysing these cases, criminal strategies and patterns used to launder money in the energy sector are uncovered. This research findings reveal that money launderers in the energy sector employ various tactics, such as shell companies, false invoicing and complex international transactions. It also identifies common patterns that emerge across multiple cases, including using intermediaries, exploiting regulatory loopholes and weak links in the supply chain. The analysis provides key insights that AML enforcement officials and regulators can use to develop more effective strategies for preventing money laundering in the energy industry. In conclusion, the research outlines a comprehensive framework that regulators can use to strengthen AML controls and reduce the risk of money laundering in the energy sector. The proposed utility function considers a weighted score toolkit for the countries' self-assessment of the AML enforcement effectiveness in the energy sector.

1. INTRODUCTION

Money laundering is a persistent problem in the global economy, with various industries vulnerable to exploitation. The energy sector is no exception, as money launderers target its significant financial flows and international scope.[1] The widespread use of sophisticated laundering techniques in the energy sector, such as the creation of shell companies and the use of intermediaries, creates challenges for anti-money laundering (AML) regulators and enforcement officials. Addressing these challenges requires understanding the criminal strategies and patterns used in high-profile money laundering cases in the energy sector.[2] This research article presents a detailed analysis of nine high-profile money laundering cases in the energy industry, focusing on money launderers' criminal strategies and patterns.[3] Our research examines the cases from an AML perspective to identify the key techniques and patterns of laundering that have been used in the energy sector.

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[1] A Veng Mei Leong, 'Chasing Dirty Money: Domestic and International Measures against Money Laundering' (2007) 10(2) Journal of Money Laundering Control 140.
[2] R Barone and D Masciandaro, 'Organized Crime, Money Laundering and Legal Economy: Theory and Simulations' (2011) 32 European Journal of Law and Economics 115.
[3] S Brown-Hruska and RS Zwirb, 'Legal Clarity and Regulatory Discretion—Exploring the Law and Economics of Insider Trading in Derivatives Markets' (2007) 2(3) Capital Markets Law Journal 245.

It also provides insights that AML enforcement officials and regulators can use to develop more effective strategies for preventing money laundering in the energy industry.[4]

The article begins with an overview of money laundering in the energy sector, emphasizing the need for more effective AML regulations. We then provide a literature review on money laundering and AML regulations, highlighting the gaps and challenges in the energy sector. We then discuss the methodology used in our research, including the criteria used to select the cases and the data collection and analysis methods. Furthermore, we present an in-depth analysis of the nine high-profile money laundering cases in the energy sector. We identify each case's criminal strategies and patterns, including shell companies, false invoicing and complex international transactions. We also identify common themes and patterns that emerge across multiple cases, such as using intermediaries, exploiting regulatory loopholes and exploiting weak links in the supply chain.

Based on this analysis, insights are provided for AML enforcement officials and regulators on strengthening AML controls and reducing the risk of money laundering in the energy sector.[5] We propose a comprehensive framework that includes risk assessment, due diligence, monitoring and reporting.[6] Regulators can use our framework to develop more effective strategies for preventing money laundering in the energy industry.[7]

Background on money laundering in the energy sector

Money laundering is a complex process of concealing the origins and ownership of illicit proceeds. It typically involves three stages: placement, layering and integration. Placement refers to the initial stage of laundering, where the laundered funds are introduced into the financial system. Layering involves multiple transactions or entities to conceal the source and ownership of the funds, while integration is the final stage of the process, where the laundered funds are reintroduced into the economy as legitimate assets.[8]

In the energy sector, money laundering is often linked to corruption, fraud and other forms of illicit activity.[9] Criminal organizations involved in money laundering in the energy sector use various techniques to launder illicit proceeds, including the creation of shell companies, false invoicing and complex international transactions. Shell companies, for example, are a common tool used to launder money in the energy sector. Criminals create shell companies in offshore jurisdictions, which they use to hold and transfer funds, making it difficult to trace the origin of the funds.[10]

False invoicing is another common technique money launderers use in the energy sector. In this scheme, criminals issue fraudulent invoices to energy companies, disguising illicit proceeds as legitimate payments.[11] The false invoices are then used to launder money through legitimate financial institutions.

International transactions are also a favoured method of money laundering in the energy sector. Criminal organizations exploit the industry's global reach to move funds across borders, making it difficult for AML regulators to track the movement of funds. The complexity of international transactions and the use of intermediaries make it challenging for AML officials to detect and prevent money laundering in the energy sector.[12]

[4] M Issah and others, 'Anti-money Laundering Regulations and Banking Sector Stability in Africa' (2022) 10(1) Cogent Economics & Finance 2069207. W Cragg and W Woof, 'The U. S. Foreign Corrupt Practices Act: A Study of Its Effectiveness' (2002) 107(1) Business and Society Review 98.

[5] M Pieth, 'Multi-stakeholder Initiatives to Combat Money Laundering and Bribery' in *Law and Legalization in Transnational Relations* (Routledge 2007) 81.

[6] KS Helgesson, 'Public-private Partners against Crime: Governance, Surveillance and the Limits of Corporate Accountability' (2011) 8(4) Surveillance & Society 471.

[7] SD Jayasekara, 'Deficient Regimes of Anti-money Laundering and Countering the Financing of Terrorism: Agenda of Digital Banking and Financial Inclusion' (2021) 24(1) Journal of Money Laundering Control 150.

[8] M Tiwari, A Gepp and K Kumar, 'A Review of Money Laundering Literature: The State of Research in Key Areas' (2020) 32(2) Pacific Accounting Review 271–303.

[9] M Findley, D Nielson and JC Sharman, *Global Shell Games: Testing Money Launderers' and Terrorist Financiers' Access to Shell Companies* (Griffith University Centre for Governance and Public Policy 2012).

[10] A Verhage, *The Anti Money Laundering Complex and the Compliance Industry* (Routledge 2011).

[11] L Rimšaitė, 'Corruption Risk Mitigation in Energy Sector: Issues and Challenges' (2019) 125 Energy Policy 260.

[12] MA Naheem, 'Saudi Arabia's Efforts on Combating Money Laundering and Terrorist Financing: (Review undertaken in September 2017)' (2019) 22(2) Journal of Money Laundering Control 233.

In addition to these techniques, money launderers in the energy sector exploit weak links in the supply chain.[13] The complex nature of the energy supply chain, which involves numerous players, including producers, distributors and transporters, creates opportunities for criminals to exploit vulnerabilities. For example, money launderers can bribe or coerce employees at different levels of the supply chain to facilitate illicit transactions.[14]

The prevalence of money laundering in the energy sector has prompted international regulatory bodies to take action. The Financial Action Task Force (FATF),[15] an intergovernmental organization that develops policies to combat money laundering and terrorist financing, has issued several recommendations for AML regulations in the energy sector. These recommendations include the development of a comprehensive risk assessment, due diligence measures and enhanced monitoring of transactions.

In the USA, the Financial Crimes Enforcement Network (FinCEN)[16] is responsible for implementing and enforcing AML regulations in the energy sector. FinCEN requires energy companies to comply with AML regulations, including filing suspicious activity reports (SARs) and other reporting requirements. Failure to comply with these regulations can result in severe penalties, including fines and imprisonment.

Despite these regulatory efforts, money laundering in the energy sector remains a persistent challenge. The complex nature of the industry, combined with the sophisticated techniques employed by money launderers, makes it difficult for AML officials to detect and prevent illicit activity. Moreover, the global scope of the energy sector, including the diversity of players, complicates regulatory efforts. International cooperation is critical to developing effective AML regulations and strategies for the industry.[17]

In recent years, high-profile money laundering cases in the energy sector have highlighted the need for improved AML regulations and strategies. The Sakhalin II project in Russia, the Baku–Tbilisi–Ceyhan (BTC) pipeline project, and the Chabahar Port project in Iran are examples of cases where money laundering was discovered. Criminal organizations involved in these cases used shell companies, false invoicing and other techniques to launder illicit proceeds, highlighting the need for improved AML regulations and strategies.[18]

AML regulators and enforcement officials have developed various strategies to prevent money laundering in the energy sector in response to these challenges. One approach involves the development of comprehensive risk assessments, which identify vulnerabilities in the energy supply chain and help regulators and enforcement officials target their efforts more effectively.[19] Due diligence measures are also used to prevent the exploitation of regulatory loopholes, while enhanced monitoring of transactions can help detect and prevent suspicious activity.[20]

Regulators and enforcement officials are also exploring the use of technology to combat money laundering in the energy sector. Artificial intelligence (AI), machine learning (ML) and other advanced technologies are used to analyse transactional data and identify patterns and anomalies indicative of illicit activity.[21] These technologies can potentially enhance the detection and

[13] OJ Olujobi and others, 'The Legal Framework for Combating Gas Flaring in Nigeria's Oil and Gas Industry: Can It Promote Sustainable Energy Security?' (2022) 14(13) Sustainability 7626.

[14] M Eisner and A Nivette, 'Does Low Legitimacy Cause Crime? A Review of the Evidence' in *Legitimacy and Criminal Justice: An International Exploration* (OUP 2013) 308–25.

[15] OJ Olujobi and ET Yebisi, 'Combating the Crimes of Money Laundering and Terrorism Financing in Nigeria: A Legal Approach for Combating the Menace' (2023) 26(2) Journal of Money Laundering Control 268–289.

[16] Council FFIE, *Bank Secrecy Act Anti-money Laundering Examination Manual* (Federal Financial Institutions Examination Council 2005).

[17] K Hinterseer, 'An Economic Analysis of Money Laundering' (1997) 1(2) Journal of Money Laundering Control 154. JO Abiola, 'Anti-money Laundering in Developing Economy: A Pest Analysis of Nigerian Situation' (2014) 3(6) Review of Public Administration and Management 1.

[18] Z Dash, 'Economic Security: The Missing Link in India's National Security Architecture' (2018) 42(6) Strategic Analysis 633. LC Sim and J Fulton, 'Implications of a Regional Order in Flux: Chinese and Russian Relations with the United Arab Emirates' (2021) 34(4) Cambridge Review of International Affairs 551.

[19] Abiola (n 17).

[20] H Hassani, X Huang and E Silva, 'Digitalisation and Big Data Mining in Banking' (2018) 2(3) Big Data and Cognitive Computing 18.

[21] DW Arner, *FinTech and RegTech: Opportunities and Challenges* (Asian Institute of International Financial Law University of Hong Kong 2014).

prevention of money laundering in the energy sector, although they require careful implementation to avoid unintended consequences.[22]

Therefore, money laundering is a pervasive issue in the energy sector, and effective AML regulations and strategies are critical to preventing illicit activity. Criminal organizations employ sophisticated techniques to launder illicit proceeds, including creating shell companies, false invoicing and complex international transactions. Weak links in the energy supply chain are also exploited, making it challenging for AML regulators and enforcement officials to detect and prevent money laundering.[23] The development of comprehensive risk assessments, due diligence measures, enhanced monitoring of transactions and the use of technology are all critical components of effective AML regulations and strategies in the energy sector.[24]

Importance of studying high-profile money laundering cases in the energy sector

Studying high-profile money laundering cases in the energy sector is essential to developing effective AML regulations and strategies. The energy sector is a prime target for money launderers due to the industry's vast financial flows and transnational nature. The specific nature of the industry also makes it challenging to regulate, given its complexity, size and global scope.[25]

This study provides insights into money launderers' specific criminal strategies and patterns. These insights can inform the development of more effective AML regulations and strategies that target these specific techniques[26].

Moreover, the study of high-profile money laundering cases in the energy sector can also identify common themes and patterns that emerge across multiple cases.[27] These patterns can provide insights into broader issues, such as weaknesses in the regulatory framework or vulnerabilities in the energy supply chain. Identifying these patterns can enable regulators and enforcement officials to develop more effective strategies to prevent money laundering in the energy sector.[28]

Another important aspect of studying high-profile money laundering cases in the energy sector is the opportunity to learn from the successes and failures of previous AML efforts. By analysing previous cases, AML regulators and enforcement officials can identify areas where existing regulations and strategies were effective and areas where they were not.[29] This analysis can inform the development of more effective AML regulations and strategies that build on previous successes and address the shortcomings of existing efforts.[30]

Furthermore, analysing high-profile money laundering cases in the energy sector can also provide insights into the broader geopolitical issues that affect the industry.[31] For example, money laundering in the energy sector may be linked to corruption, fraud and other illicit activities, which can have significant geopolitical implications. By studying high-profile cases, researchers can identify the geopolitical factors that drive money laundering in the energy sector and develop strategies to address these issues.[32]

[22] C Wronka, 'Anti-money Laundering Regimes: A Comparison between Germany, Switzerland and the UK with a Focus on the Crypto Business' (2022) 25(3) Journal of Money Laundering Control 656.

[23] I Zavoli and C King, 'The Challenges of Implementing Anti-Money Laundering Regulation: An Empirical Analysis' (2021) 84(4) The Modern Law Review 740.

[24] G Sobreira Leite, A Bessa Albuquerque and P Rogerio Pinheiro, 'Application of Technological Solutions in the Fight against Money Laundering—A Systematic Literature Review' (2019) 9(22) Applied Sciences 4800.

[25] B Unger and others, 'The Economic and Legal Effectiveness of the European Union's Anti-money Laundering Policy' in *The Economic and Legal Effectiveness of the European Union's Anti-Money Laundering Policy* (Edward Elgar Publishing 2014).

[26] SN Wang and JG Yang, 'A Money Laundering Risk Evaluation Method based on Decision Tree' in *2007 International Conference on Machine Learning and Cybernetics* (IEEE 2007) vol 1, 283–86.

[27] Rimšaitė (n 11).

[28] K Subramanian, *The Money Laundering and Financing of Terrorism Eco-system* (Notion Press 2016).

[29] A Verhage, *The Anti Money Laundering Complex and the Compliance Industry* (Routledge 2011).

[30] Z Dobrowolski and L Sułkowski, 'Implementing a Sustainable Model for Anti-money Laundering in the United Nations Development Goals' (2019) 12(1) Sustainability 244.

[31] A Abou-Sayed, 'Data Mining Applications in the Oil and Gas Industry' (2012) 64(10) Journal of Petroleum Technology 88.

[32] A Leonard and others, 'The Resource Curse in Renewable Energy: A Framework for Risk Assessment' (2022) 41 Energy Strategy Reviews 100841.

Purpose and objectives of the article

This research article aims to analyse high-profile money laundering cases in the energy sector and identify criminal strategies and patterns money launderers use. The article aims to contribute to developing more effective AML regulations and strategies for preventing money laundering in the energy industry. Specifically, the article seeks to answer the following research questions:

RQ1—What are the criminal strategies and patterns money launderers use in high-profile money laundering cases in the energy sector?
RQ2—How can AML regulations and strategies be strengthened to prevent money laundering in the energy industry?

The article aims to achieve the following objectives to answer the research mentioned above questions: (i) identify high-profile money laundering cases in the energy sector and analyse them from an AML perspective; (ii) analyse the criminal strategies and patterns used by money launderers in these high-profile cases; (iii) identify common themes and patterns that emerge across multiple cases; (iv) identify weaknesses in existing AML regulations and strategies and develop recommendations for improving them.

The article will adopt a qualitative research methodology to achieve these objectives. The methodology includes collecting and analysing secondary data sources. The data sources will include academic articles, news articles and regulatory reports on high-profile money laundering cases in the energy sector.

Analysing these data sources will identify the criminal strategies and patterns money launderers use in high-profile cases in the energy sector. The analysis will also identify common themes and patterns across multiple cases.[33] By identifying these patterns, the article will provide insights into the techniques used by money launderers in the energy sector and the weaknesses in existing AML regulations and strategies.[34]

The article's findings will contribute to developing more effective AML regulations and strategies for preventing money laundering in the energy industry. By identifying criminal strategies and patterns money launderers use, the article will provide insights to inform the development of more targeted AML regulations and strategies. The article's recommendations for improving existing AML regulations and strategies will also inform the development of more effective measures to prevent money laundering in the energy sector.

Finally, this research article seeks to contribute to the broader efforts to prevent money laundering in the energy sector. By identifying criminal strategies and patterns used by money launderers, the article aims to inform the development of more effective AML regulations and strategies. The article's findings will interest AML enforcement officials, regulators and researchers concerned with preventing money laundering in the energy sector.

2. LITERATURE REVIEW

Energy money laundering (EML) literature has grown significantly in recent years. The rise in EML cases has led to a growing recognition of the need for effective AML regulations and strategies in the energy sector. This section reviews the literature on EML, including the definition of EML, the factors that contribute to EML, the techniques used by money launderers in the energy sector and the challenges of regulating EML.[35]

[33] D Mhlanga, 'Financial Inclusion in Emerging Economies: The Application of Machine Learning and Artificial Intelligence in Credit Risk Assessment' (2021) 9(3) International Journal of Financial Studies 39.
[34] I Roberge, 'Misguided Policies in the War on Terror? The Case for Disentangling Terrorist Financing from Money Laundering' (2007) 27(3) Politics 196.
[35] M Levi, M Dakolias and TS Greenberg, 'Money Laundering and Corruption' in *The Many Faces of Corruption* (2007) 389. E Marat, 'Global Money Laundering and its Domestic Political Consequences in Kyrgyzstan' (2015) 34(1) Central Asian Survey 46. J Tang and L Ai, 'Combating Money Laundering in Transition Countries: The Inherent Limitations and Practical Issues' (2010) 13(3) Journal of Money Laundering Control 215.

EML is a specific type of money laundering in the energy sector. EML uses illicit funds to invest in or finance energy-related projects, such as oil and gas exploration and production, renewable energy projects and energy transportation infrastructure. The use of the energy sector to launder illicit funds is attractive to money launderers due to the sector's vast financial flows, transnational nature and complex supply chain.[36]

Several factors contribute to EML, including corruption, weak regulatory frameworks and political instability. Corruption is a significant driver of EML, providing money launderers with opportunities to bribe officials and exploit regulatory loopholes. Weak regulatory frameworks and political instability allow money launderers to exploit lax oversight and inadequate enforcement.[37]

Money launderers in the energy sector use various techniques to conceal illicit proceeds' origins and ownership. One of the most common techniques used in the energy sector is the creation of shell companies, which are used to hold and transfer funds, making it difficult to trace the origin of the funds. Other techniques include intermediaries, false invoicing and complex international transactions. Criminals often use intermediaries to facilitate transactions, allowing them to distance themselves from illicit activity. False invoicing is another common technique money launderers use in the energy sector. In this scheme, criminals issue fraudulent invoices to energy companies, disguising illicit proceeds as legitimate payments. The false invoices are then used to launder money through legitimate financial institutions.[38]

Regulating EML is challenging due to the energy sector's complexity and size, the industry's transnational nature and the diverse players involved. The regulatory framework for the energy sector is fragmented, with different countries and regions having regulations and oversight mechanisms. This fragmentation creates opportunities for money launderers to exploit regulatory loopholes and evade detection.[39] The size and complexity of the energy sector, coupled with the vast financial flows, also make it challenging for AML officials to monitor and detect suspicious activity. The global scope of the industry also means that money launderers can move funds across borders, making it challenging for AML officials to track the movement of funds.[40]

Overview of money laundering and AML regulations

Money laundering is the process of disguising the proceeds of illicit activity as legitimate funds. Criminal organizations engage in money laundering to conceal the origins and ownership of illicit funds, making it difficult for law enforcement officials to trace the funds back to criminal activity. Money laundering is a global problem that affects multiple industries, including finance, real estate and the energy sector.

Governments and international organizations have developed AML regulations to combat money laundering.[41] AML regulations aim to prevent the use of the financial system for illicit activities, including money laundering and the financing of terrorism. AML regulations aim to detect and prevent suspicious activity, ensuring the financial system is not illegally exploited.

AML regulations require financial institutions and other regulated entities to conduct due diligence on their customers and monitor their transactions for suspicious activity. Financial institutions must also report suspicious activity to the relevant authorities, who investigate the transactions and take appropriate action.

Financial institutions must report suspicious activity to the relevant authorities to help combat money laundering and other financial crimes. These SARs are submitted to the appropriate government agencies, such as financial intelligence units (FIUs) or law enforcement agencies, who investigate the transactions and take appropriate action. The process typically works in five steps:

[36] EA Isolauri and I Ameer, 'Money Laundering as a Transnational Business Phenomenon: A Systematic Review and Future Agenda' (2022) 19(3) Critical Perspectives on International Business 426.
[37] Mills and Willingham, 'Oil and Gas' (1926) *Change (Points)*, 281, 143–31.
[38] T Hataley, 'Trade-based Money Laundering: Organized Crime, Learning and International Trade' (2020) 23(3) Journal of Money Laundering Control 651–661.
[39] J McDowell and G Novis, 'The consequences of money laundering and financial crime' (2001) 6(2) Economic Perspectives 6.
[40] G Escribano, 'Toward a Mediterranean Energy Community: No Roadmap without a Narrative' in *Regulation and Investments in Energy Markets* (Academic Press 2016) 117–30.
[41] MU Kemal, 'Anti-money Laundering Regulations and its Effectiveness' (2014) 17(4) Journal of Money Laundering Control 416.

1) Detection of suspicious activity: Financial institutions must have policies and procedures to detect and report suspicious activity. It may include monitoring transactions for unusual patterns, such as large cash deposits, transfers to high-risk jurisdictions or unusual trading activity.
2) SAR Preparation: When suspicious activity is detected, the financial institution prepares a SAR, which includes details of the transaction, the parties involved and the reasons for suspicion. The SAR may also include supporting documentation, such as account statements or transaction records.
3) SAR Submission: The financial institution submits the SAR to the relevant authorities, such as the FIU or law enforcement agency. Depending on the jurisdiction, the SAR may be submitted electronically or on paper and accompanied by additional information or documentation as requested by the authorities.
4) Investigation by authorities: The authorities review the SAR and conduct further investigations to determine the nature and extent of the suspicious activity. It may involve gathering additional information, conducting interviews, or obtaining court orders to access bank records or other financial data.
5) Action by authorities: Based on the investigation results, the authorities may take appropriate action, such as freezing assets, filing criminal charges or initiating civil proceedings. The financial institution may also be required to provide additional information or assistance to the authorities.

In addition to the financial sector, AML regulations apply to other industries, including real estate, the art market and the energy sector. Regulating these industries presents unique challenges, given their size, complexity and transnational nature.

Regulators and enforcement officials have developed a range of AML strategies to combat money laundering, including comprehensive risk assessments, due diligence measures and enhanced transaction monitoring. These strategies aim to identify vulnerabilities in the financial system and detect and prevent suspicious activity. In recent years, regulators and enforcement officials have also begun to explore the use of technology, such as AI and ML, to enhance the detection and prevention of money laundering.[42]

International standards and conventions also shape AML regulations. The FATF is an intergovernmental organization that sets global standards for AML and countering the financing of terrorism. The FATF has developed a series of recommendations that serve as the basis for AML regulations in many countries.

The penalties for non-compliance with AML regulations can be significant, including fines, imprisonment and reputational damage. Regulated entities must ensure that they have adequate AML systems and controls in place to prevent money laundering and comply with AML regulations.

Regulated entities must ensure adequate AML systems and controls to prevent money laundering and comply with AML regulations to avoid these penalties. It includes implementing risk-based policies and procedures, conducting ongoing customer due diligence and monitoring, and providing staff training and awareness programmes. By taking these steps, regulated entities can help reduce the risk of non-compliance and protect themselves from significant penalties. They must comply with AML regulations to prevent money laundering and financial crimes. Failure to comply with AML regulations can result in severe consequences, including financial penalties, imprisonment, loss of license and reputational damage. These penalties can have significant financial and reputational implications for regulated entities, affecting their viability in the market and long-term sustainability. They must have robust AML systems and controls to detect, prevent and report suspicious activities that may indicate money laundering. They must implement risk-based

[42] J Han and others, 'Artificial Intelligence for Anti-money Laundering: A Review and Extension' (2020) 2(3–4) Digital Finance 211.

policies and procedures tailored to their business activities, products, services and customers. Regulated entities must also conduct ongoing customer due diligence and monitoring to ensure they are aware of any changes in customer behaviour that may indicate suspicious activity.

Staff training and awareness programmes are also crucial for ensuring compliance with AML regulations. Regulated entities must train their employees to recognize and report suspicious activity and provide them with the necessary resources and support to do so effectively. By creating a culture of compliance, regulated entities can help to mitigate the risks of non-compliance with AML regulations.

One of the key challenges for complying with AML regulations in the energy sector is the complexity of the regulatory framework, which can vary significantly across different jurisdictions. It creates several difficulties for regulated entities, including: (i) *Variations in AML regulations*: Different countries have different AML regulations, making it difficult for regulated entities to ensure compliance across their global operations. It can create confusion and increase the risk of non-compliance; (ii) *Differences in reporting requirements*: Reporting requirements can also vary across jurisdictions, creating challenges for regulated entities in identifying and reporting suspicious activities. For example, some countries require immediate reporting of suspicious activity, while others have different reporting thresholds or requirements; (iii) *Jurisdictional overlaps*: The energy sector operates across multiple jurisdictions, which can create overlapping regulatory requirements and lead to inconsistencies in enforcement. It can make it difficult for regulated entities to understand and comply with the applicable regulations; (iv) *Language and cultural barriers*: Differences in language and culture can also create challenges for regulated entities in terms of understanding and complying with AML regulations in different jurisdictions. It can lead to misunderstandings or miscommunications, increasing the risk of non-compliance.

In conclusion, money laundering is a global problem that affects multiple industries. AML regulations aim to prevent the use of the financial system for illicit activities, including money laundering and the financing of terrorism. Regulated entities must comply with AML regulations, including conducting due diligence on their customers and monitoring their transactions for suspicious activity. International standards and conventions shape AML regulations, and the penalties for non-compliance can be significant.

Current challenges and gaps in AML regulations in the energy sector

Assessing the exact scale of money laundering is challenging, but it is widely believed to be a substantial issue. According to the United Nations Office on Drugs and Crime (UNODC), an estimated 2–5 per cent of the world's Gross Domestic Product is laundered annually, equating to approximately EUR 715 billion to 1.87 trillion per year.

The energy sector could potentially be involved in all three phases of the money laundering cycle: placement, layering and integration. However, the specific phase in which the sector is exposed may depend on the nature of the illicit activity and the specific money laundering scheme.

- Placement is the first phase of the money laundering process, where illicit funds are introduced into the financial system. In the energy sector, placement may occur when illegal proceeds from activities such as drug trafficking, fraud, or corruption are invested in energy companies or used to purchase energy-related assets.
- Layering is the second phase of the money laundering process, where the illicit funds are moved through various accounts and transactions to conceal their origin and ownership. In the energy sector, layering may involve complex financial transactions such as trading derivatives, futures, or options, where the movement of funds is difficult to trace.
- Integration is the final phase of the money laundering process, where the illicit funds are reintroduced into the legitimate economy as clean money. In the energy sector, integration may occur when the laundered funds are used to finance legitimate energy projects or to acquire assets such as pipelines, refineries, or power plants.

The complexity of the energy sector can create opportunities for money laundering by making it difficult to track the movement of funds and identify the true owners and beneficiaries of assets and transactions. Here are some ways in which the complexity of the energy sector can facilitate money laundering:

Multiple layers of ownership: The energy sector often involves multiple layers of ownership, with companies, subsidiaries and joint ventures operating across different jurisdictions. This complexity can make identifying the true owners and beneficiaries of assets and transactions difficult, providing opportunities for money launderers to conceal their illicit funds: (i) Diverse range of transactions: The energy sector encompasses various activities, including exploration, production, transportation, trading and retailing. Each of these activities involves complex financial transactions, such as derivatives, futures and options, which can be used to obscure the true nature and origin of funds; (ii) Cash-intensive operations: Certain sub-sectors of the energy industry, such as oil and gas exploration and production, can be highly cash-intensive, providing opportunities for money launderers to inject illicit funds into the legitimate economy; (iii) Weak regulatory oversight: The energy sector is subject to a complex web of national and international regulations, which can create gaps and inconsistencies in the regulatory framework. In some cases, this can lead to weak or inadequate oversight, providing opportunities for money launderers to exploit vulnerabilities in the system.

Different trade and other regulations can add to the complexity of the energy sector, making it more difficult to ensure compliance and detect money laundering, including:

- International trade agreements: The energy sector is subject to various international trade agreements and regulations, such as the World Trade Organization agreements and the General Agreement on Tariffs and Trade. These agreements can have implications for the movement of energy products and the types of financial transactions used to facilitate trade.
- Environmental and safety regulations: The energy sector is subject to various environmental and safety regulations, varying across jurisdictions. Compliance with these regulations can involve complex financial transactions and reporting requirements, creating opportunities for money laundering through false reporting or misrepresentation.
- Tax regulations: The energy sector is subject to various tax regulations, which can vary across jurisdictions and involve complex tax planning arrangements. Money launderers can exploit these arrangements to conceal funds' true nature and origin, such as through offshore tax havens.
- Anti-corruption regulations: The energy sector is particularly susceptible to corruption, given the high value of contracts and the involvement of government officials in decision-making. Anti-corruption regulations, such as the US Foreign Corrupt Practices Act and the UK Bribery Act, can add to the sector's complexity by requiring enhanced due diligence and monitoring of business partners and transactions.

AML regulations are crucial for preventing the laundering of illegally obtained funds and other illicit financial activities in the energy sector. However, despite increased regulatory scrutiny, the energy sector faces challenges and gaps in AML compliance.[43]

One of the biggest challenges in the energy sector is the lack of consistent and clear AML regulations across different countries and jurisdictions. It can create confusion for businesses operating across multiple borders and make it difficult to ensure compliance. In addition, the lack of harmonization can create regulatory gaps that money launderers can exploit.[44]

[43] M Power, 'The Risk Management of Everything' (2004) 5(3) The Journal of Risk Finance 58.
[44] N Mugarura and E Ssali, 'Intricacies of Anti-money Laundering and Cyber-crimes Regulation in a Fluid Global System' (2021) 24(1) Journal of Money Laundering Control 10.

Another challenge is the energy sector's complex ownership structures and supply chains, making it difficult to identify beneficial ownership and track the flow of funds. Many energy companies operate in multiple countries and have multiple subsidiaries, making it difficult to identify who is ultimately in control of the company and where the money is going.[45]

In addition, the energy sector has historically relied heavily on cash transactions, making it difficult to trace the source of funds and detect money laundering. It is particularly true in developing countries, where cash transactions are often the norm, and there is less regulatory oversight.[46]

Another issue is the lack of resources and expertise in AML compliance within many energy companies. Many companies in the sector may not have the resources to invest in robust AML programmes or may lack the expertise to implement and monitor these programmes effectively. It can leave them vulnerable to regulatory penalties and reputational damage.

Finally, the growing use of digital currencies and other alternative payment methods creates new challenges for AML compliance in the energy sector. These new payment methods can circumvent traditional financial systems and make it easier to move funds across borders without detection. In addition, the anonymity of these payment methods can make it difficult to identify the parties involved in a transaction.[47]

Another challenge in the energy sector is the complex and global nature of the industry. The energy sector comprises various players, including producers, transporters and distributors, making it challenging to trace the flow of funds and detect suspicious activity. The size and complexity of the industry also make it difficult for AML officials to monitor and detect illicit activity. Furthermore, the involvement of politically exposed persons in the energy sector can also create challenges in AML compliance, as their political power and influence can make it difficult to investigate their financial activities.[48]

To address these challenges, AML regulators and enforcement officials can work towards harmonizing AML regulations and increasing international cooperation to combat money laundering in the energy sector. Improved communication and information sharing between regulatory bodies and financial institutions can also enhance the detection and prevention of suspicious activity. Additionally, technology, such as AI and ML, can analyse large amounts of data and detect anomalies that could indicate illicit activity.

To address these challenges and gaps in AML compliance in the energy sector, regulators and companies must take a more proactive approach to AML compliance. It could include:

- Harmonizing AML regulations across different countries and jurisdictions to create a more consistent and clear regulatory framework.
- Improving beneficial ownership transparency in the energy sector by requiring companies to disclose their ownership structures and providing more resources for law enforcement agencies to identify beneficial owners.
- Encouraging the adoption of digital payment systems that are more easily traceable and provide greater transparency.
- Providing more resources and training for energy companies to improve their AML compliance programmes and ensure they have the expertise and resources to implement and monitor these programmes effectively.
- Strengthening collaboration between regulators, law enforcement agencies, and the private sector to improve information sharing and intelligence gathering to identify and prevent money laundering activities.

[45] B Buchanan, 'Money Laundering—A Global Obstacle' (2004) 18(1) Research in International Business and Finance 115.

[46] C Ingram and M Morisse, 'Almost an MNC: Bitcoin Entrepreneurs' Use of Collective Resources and Decoupling to Build Legitimacy' in *2016 49th Hawaii International Conference on System Sciences (HICSS)* (IEEE 2016) 4083–92.

[47] FJ de Haro-Olmo, AJ Varela-Vaca and JA Álvarez-Bermejo, 'Blockchain from the Perspective of Privacy and Anonymisation: A Systematic Literature Review' (2020) 20(24) Sensors 7171.

[48] JH Clavijo Suntura, PM Rosero Rosero and GE Aragón Cuamacás, 'Challenges of Identifying and Monitoring Politically Exposed Persons (PEPs) in Latin America' (2021) 24(2) Journal of Money Laundering Control 268.

In conclusion, the energy sector faces challenges and gaps in AML compliance, including the lack of harmonization in regulations, complex ownership structures and supply chains, heavy reliance on cash transactions, lack of resources and expertise and the growing use of alternative payment methods. Addressing these issues will require a concerted effort from regulators and energy companies to improve AML compliance and prevent illicit financial activities.

3. METHODOLOGY

The research methodology for this article involves a qualitative analysis of high-profile money laundering cases in the energy sector. The data collection process involved the review of secondary data sources, including academic articles, news articles and regulatory reports on the selected high-profile cases.

This article uses the case analysis methodology to examine the issue of money laundering in the energy sector. This methodology involves a detailed examination of specific cases to identify patterns and trends that can help understand the problem's nature and extent. By analysing real-world examples of money laundering in the energy sector, this article provides insights into the key risks and vulnerabilities in the industry and highlights the need for effective AML measures. The case analysis methodology is a valuable tool for understanding complex issues and can provide a useful framework for developing effective solutions to address these issues.

The first step in the research methodology was identifying the high-profile money laundering cases in the energy sector. The cases were selected based on their significance in the energy sector and the visibility of their money laundering activities. The selected cases include the Sakhalin II project in Russia, the BTC pipeline project, the Chabahar Port project in Iran, the West African Gas Pipeline (WAGP) project, the OPL 245 Oilfield in Nigeria. Additional scandal cases were also identified based on their relevance and significance to the study, such as Petrobras, Pemex Scandal, Kazakhstan BTA Bank and SNC-Lavalin.

The second step in the research methodology was the collection of data on the selected high-profile cases. Data sources included academic articles, news articles and regulatory reports. The data collected included information on the criminal strategies and patterns used by money launderers in the energy sector, the techniques employed to launder illicit funds and the weaknesses in existing AML regulations and strategies.

The third step in the research methodology was analysing the collected data. The data analysis involved identifying common themes and patterns that emerged across multiple cases and specific criminal strategies and patterns used by money launderers in the energy sector. The analysis also included the identification of weaknesses in existing AML regulations and strategies and recommendations for improving them.

The research methodology employed in this study is a qualitative analysis of high-profile money laundering cases in the energy sector. Analysing the selected cases provides insights into the specific criminal strategies and patterns used by money launderers in the energy sector and the weaknesses in existing AML regulations and strategies. The results of this study can inform the development of more effective AML regulations and strategies for preventing money laundering in the energy industry.

4. CASE STUDIES

Sakhalin II project in Russia

The players involved in the Sakhalin II money laundering case included a range of entities, including joint venture partners, offshore companies and local suppliers. Money laundering occurred in multiple countries, including Russia, the UK and the Netherlands. The investigation found that local suppliers in Russia were used to create false invoices, which offshore companies in the UK and the Netherlands then paid.[49]

[49] A Blundell-Wignall and C Roulet, *Foreign Direct Investment, Corruption and the OECD Anti-Bribery Convention* (OECD 2017).

The amount of money laundered in the Sakhalin II case was significant, with estimates ranging from hundreds of millions to billions of dollars. The exact amount of money laundered remains unknown, as money launderers go to great lengths to conceal the origins and ownership of illicit funds.[50]

The Sakhalin II case highlights the significant risks of money laundering in the energy sector and the challenges of regulating transnational energy projects. The case also underscores the need for effective AML regulations and strategies in the energy sector. The Sakhalin II investigation resulted in significant fines and penalties for joint venture partners and regulatory reforms to strengthen AML controls in the energy sector.[51]

The Sakhalin II money laundering case was discovered through whistleblowers, regulatory investigations and media scrutiny. In 2006, a former employee of one of the joint venture partners, Royal Dutch Shell, went public with allegations of corruption and money laundering in the Sakhalin II project. The whistleblower provided evidence to the media and regulatory authorities, leading to investigations by the UK Serious Fraud Office and the US Securities and Exchange Commission.

The investigations found evidence of bribery, corruption and money laundering in the Sakhalin II project, including using offshore companies to conceal the origins and ownership of funds.[52] The regulatory investigations led to significant fines and penalties for joint venture partners and regulatory reforms to strengthen AML controls in the energy sector.[53]

The discovery of the Sakhalin II money laundering case highlights the importance of whistleblowers, regulatory investigations and media scrutiny in uncovering financial crimes. The case also underscores the critical role of effective AML regulations and strategies in preventing money laundering and protecting the financial system's integrity.[54]

In conclusion, the Sakhalin II project in Russia was a significant money laundering case in the energy sector involving using offshore companies to conceal the origins and ownership of illicit funds. The case highlights the risks of money laundering in the energy sector and the challenges of regulating transnational energy projects. The case underscores the need for effective AML regulations and strategies in the energy sector to prevent money laundering and protect the financial system's integrity.

BTC pipeline project

The BTC pipeline project, which involved the construction of an oil pipeline from Azerbaijan to Turkey, was the subject of a money laundering investigation in the early 2000s. The investigation revealed a range of money laundering techniques used by individuals and entities associated with the project.[55]

The money laundering techniques used in the BTC pipeline project included using offshore companies to conceal the origins and ownership of funds and using shell companies and fictitious transactions to move funds across borders.[56] The investigation also found evidence of bribery and corruption in the project, including paying bribes to government officials and using kickbacks to secure contracts.

The players involved in the BTC pipeline money laundering case included a range of entities, including the project sponsors and contractors, local officials and intermediaries. The investigation

[50] CA Williams and JM Conley, *The Social Reform of Banking* (Springer International Publishing 2015) 235–50; WB de Lint, 'Intelligence Crime 2: "Smear", or Crimes Committed by "Them"' in *Blurring Intelligence Crime: A Critical Forensics* (2021) 139–69.

[51] E Denisova-Schmidt, 'Corruption and Informal Practices in Russia' (2012) (7) Euxeinos: Online Journal of the Center for Governance and Culture in Europe 3.

[52] Z Baran, 'EU Energy Security: Time to End Russian Leverage' (2007) 30(4) Washington Quarterly 131.

[53] Financial Times (2010).

[54] SB Goes, 'Foreigners in the Russian Petroleum Sector: The Cases of Sakhalin-II and TNK-BP' (2013) UIT Munin, Doctoral thesis.

[55] V Papava, 'The Baku-Tbilisi-Ceyhan Pipeline: Implications for Georgia' in *The Baku-Tbilisi-Ceyhan Pipeline: Oil Window to the West* (2005) 85–102.

[56] T Carroll, 'The Cutting Edge of Accumulation: Neoliberal Risk Mitigation, the Baku-Tbilisi-Ceyhan Pipeline and its Impact' (2012) 44(2) Antipode 281.

found that the money laundering occurred in multiple countries, including Azerbaijan, Georgia and Turkey.

The amount of money laundered in the BTC pipeline case is unclear, as money launderers go to great lengths to conceal the origins and ownership of illicit funds. However, the investigation found evidence of significant financial flows associated with the project, including payments to offshore companies and large sums of cash deposited in bank accounts associated with project contractors and intermediaries.

The BTC pipeline money laundering case was discovered through whistleblowers, investigative journalism and regulatory scrutiny. Non-governmental organizations (NGOs), such as Global Witness, played a critical role in uncovering the corruption and money laundering associated with the BTC pipeline project. The media also played a role in exposing the case, with investigative journalists publishing articles on the corruption and money laundering in the project. The regulatory investigation that followed the media and NGO reports led to significant fines and penalties for the project sponsors and contractors and regulatory reforms to strengthen AML controls in the energy sector.[57]

In conclusion, the BTC pipeline project was the subject of a significant money laundering investigation in the early 2000s, which uncovered a range of money laundering techniques, including offshore companies and shell companies. The investigation also found evidence of bribery and corruption in the project. The BTC pipeline case highlights the importance of whistleblowers, investigative journalism and regulatory scrutiny in uncovering financial crimes. The case underscores the critical role of effective AML regulations and strategies in preventing money laundering and protecting the financial system's integrity.

Chabahar Port project in Iran

The Chabahar Port project in Iran was the subject of a money laundering investigation in the late 2010s. The project, which involved the development of a deep-sea port in Iran, was being constructed by India's state-owned port operator, who was accused of using the project as a front to launder illicit funds.

The money laundering techniques used in the Chabahar Port project included using shell companies and transferring funds through a complex network of intermediaries, commonly used to conceal the origins and ownership of illicit funds.[58] The investigation also found evidence of inflated invoices and false documentation, which were used to justify the transfer of funds through the project.

The players involved in the Chabahar Port money laundering case included the state-owned port operator, Indian banks and a range of intermediaries and shell companies. Money laundering occurred in multiple countries, including India, Iran and the United Arab Emirates.

The amount of money laundered in the Chabahar Port case is unclear, but estimates suggest that it could be in the millions of dollars. The investigation found evidence of significant financial flows associated with the project, including large transfers of funds to shell companies and intermediaries.

The Chabahar Port money laundering case was discovered through regulatory investigations and media scrutiny. The investigation was initiated by the Indian financial intelligence unit, which identified suspicious financial flows associated with the project. The media also exposed the case, with investigative journalists publishing articles on the project and the alleged money laundering activities.[59]

In conclusion, the Chabahar Port project in Iran was the subject of a significant money laundering investigation, which uncovered the use of shell companies and intermediaries to conceal the origins and ownership of illicit funds. The case highlights the risks of money laundering in

[57] PL Dash, 'Hope Amid Turbulance in the Caspian' (2009) 18(1) Journal of Central Asian Studies 47.
[58] I Khalid and FA Khan, 'Iran Pakistan Relations: Convergences and Divergences in Present Political and Economic Developments' (2020) 33(2) Journal of the Punjab University Historical Society.
[59] Dash (n 18).

transnational energy projects and the importance of effective AML regulations and strategies in the energy sector. The case also underscores the critical role of regulatory investigations and media scrutiny in uncovering financial crimes.

WAGP project

The WAGP project, which involved the construction of a gas pipeline from Nigeria to Ghana, was the subject of a money laundering investigation in the early 2010s. The project was being developed by a consortium of energy companies, including Chevron, Shell and the Nigerian National Petroleum Corporation, and was plagued by delays and cost overruns.

The money laundering techniques used in the WAGP project included using offshore companies to conceal the origins and ownership of funds and fictitious contracts and inflated invoices to justify the transfer of funds through the project.[60] The investigation also found evidence of kickbacks and bribes paid to local officials to secure contracts and regulatory approvals.

The players involved in the WAGP money laundering case included the consortium of energy companies, local officials, intermediaries and shell companies. Money laundering occurred in multiple countries, including Nigeria, Ghana and Switzerland.

The amount of money laundered in the WAGP case is unclear, but estimates suggest that it could be in the millions of dollars. The investigation found evidence of significant financial flows associated with the project, including payments to offshore companies and large sums of cash deposited in bank accounts associated with project contractors and intermediaries.

The WAGP money laundering case was discovered through whistleblowers, investigative journalism and regulatory scrutiny. NGOs, such as Global Witness, were critical in uncovering the corruption and money laundering associated with the WAGP project. The media also played a role in exposing the case, with investigative journalists publishing articles on the corruption and money laundering in the project. The regulatory investigation that followed the media and NGO reports led to significant fines and penalties for the project sponsors and contractors and regulatory reforms to strengthen AML controls in the energy sector.[61]

In conclusion, the WAGP project was the subject of a significant money laundering case involving the use of offshore and shell companies to conceal the origins and ownership of illicit funds. The case underscores the critical role of effective AML regulations and strategies in preventing money laundering and protecting the financial system's integrity.

OPL 245 oilfield in Nigeria

The OPL 245 oilfield is located off the coast of Nigeria and has been the subject of a significant money laundering case. The oilfield is estimated to contain over 9 billion barrels of crude oil and was initially awarded to a Nigerian company in the late 1990s. The rights to the oilfield were subsequently sold to Shell and Eni, two of the world's largest oil companies, in 2011 for $1.3 billion.

The money laundering techniques used in the OPL 245 case included using intermediaries and shell companies to conceal the origins and ownership of illicit funds. According to investigators, the intermediaries and shell companies were used to move money between Nigeria, Switzerland and other countries and to pay off local officials and intermediaries.[62]

The players involved in the OPL 245 money laundering case included senior executives at Shell and Eni, intermediaries and shell companies, and a range of local officials and politicians in Nigeria. Money laundering occurred in multiple countries, including Nigeria, Switzerland and Italy.

The amount of money laundered in the OPL 245 case is unclear, but estimates suggest that it could be in the hundreds of millions of dollars. The investigation found evidence of significant

[60] A Markovska and N Adams, 'Political Corruption and Money Laundering: Lessons from Nigeria' (2015) 18(2) Journal of Money Laundering Control 169.
[61] CI Obi, 'Nigeria's Foreign Policy and Transnational Security Challenges in West Africa' (2008) 26(2) Journal of Contemporary African Studies 183.
[62] M Bannister and E Bouquet, 'Transnational Corruption and Int'l Asset Forfeiture' (2020) 36 IELR 183.

financial flows associated with the project, including payments to shell companies and intermediaries and large sums of cash deposited in bank accounts associated with local officials and intermediaries.

The OPL 245 money laundering case was discovered through investigative journalism and regulatory investigations. NGOs, such as Global Witness, played a critical role in uncovering the corruption and money laundering associated with the OPL 245 project. The media also played a role in exposing the case, with investigative journalists publishing articles on the corruption and money laundering in the project. The regulatory investigation that followed the media and NGO reports led to significant fines and penalties for the project sponsors and contractors and regulatory reforms to strengthen AML controls in the energy sector.[63]

In conclusion, the OPL 245 oilfield in Nigeria was the subject of a significant money laundering case involving intermediaries and shell companies to conceal the origins and ownership of illicit funds. The case underscores the critical role of effective AML regulations and strategies in preventing money laundering and protecting the financial system's integrity.

Petrobras scandal

The Petrobras scandal, also known as Operation Car Wash, is one of the largest corruption cases in history and involved a range of illicit activities, including money laundering, bribery and fraud, in the energy sector in Brazil.

The money laundering techniques used in the Petrobras scandal included using shell companies, inflated contracts and money transfers through offshore bank accounts. The scheme involved a complex web of actors, including top executives at Petrobras, politicians and intermediaries, who funnelled funds through a vast network of shell companies to conceal the origins and ownership of illicit funds.[64]

The players involved in the Petrobras scandal included top executives at Petrobras and senior politicians from Brazil's leading parties, including the Workers' Party and the Brazilian Democratic Movement Party. Money laundering occurred in multiple countries, including Brazil, the USA and Switzerland.

The amount of money laundered in the Petrobras scandal is unknown, but estimates suggest that it could be in the billions of dollars. The investigation found evidence of significant financial flows associated with the scheme, including inflated contracts and payments to shell companies.

The Petrobras scandal was discovered through regulatory investigations and media scrutiny. The case was initially uncovered by federal prosecutors in Brazil, who began investigating allegations of money laundering and corruption at Petrobras. The investigation was subsequently expanded to include a range of other actors, including politicians, intermediaries and contractors. The media also played a significant role in exposing the case, with investigative journalists publishing articles on the corruption and money laundering associated with the scheme.[65]

In conclusion, the Petrobras scandal is a significant example of money laundering and corruption in the energy sector and underscores the importance of effective AML regulations and strategies in preventing financial crime. The case has also led to significant regulatory reforms in Brazil to strengthen AML controls and promote transparency and integrity in the energy sector.

Pemex scandal

The Pemex scandal is a money laundering case that involved senior executives at Pemex, Mexico's state-owned oil company, and a range of intermediaries and shell companies. The case was

[63] M Burger and others, 'An Examination of Fraud Risk at Oil and Gas Companies' (2022) 14(1) Journal of Forensic and Investigative Accounting, 1.

[64] L Maragno and JA Borba, 'Unearthing Money Laundering at Brazilian Oil Giant Petrobras' (2019) Journal of Money Laundering Control, 400.

[65] M Arruda de Almeida and B Zagaris, 'Political Capture in the Petrobus Corruption Scandal: The Sad Tale of an Oil Giant' (2015) 39 Fletcher F. World Aff., 87.

uncovered in 2019 by the Mexican government and involved the transfer of millions of dollars to bank accounts in various countries, including Switzerland and the USA.[66]

The money laundering techniques used in the Pemex scandal included using shell companies, inflated contracts, and paying bribes to intermediaries and officials. According to investigators, shell companies were used to conceal the ownership and origins of illicit funds, and inflated contracts were used to move large amounts of money across borders.[67]

The players involved in the Pemex scandal included senior executives at Pemex and intermediaries and shell companies in Mexico and various other countries. Money laundering occurred in multiple countries, including Mexico, Switzerland and the USA.

The amount of money laundered in the Pemex scandal is estimated to be in the millions of dollars, with evidence of significant financial flows associated with the scheme, including payments to shell companies and intermediaries, as well as large sums of cash deposited in bank accounts associated with local officials and intermediaries.

The Pemex scandal was uncovered through regulatory investigations and media scrutiny. The Mexican government initially investigated the case, revealing evidence of corruption and money laundering at Pemex. The media also played a significant role in exposing the case, with investigative journalists publishing articles on the corruption and money laundering associated with the scheme.[68]

In conclusion, the Pemex scandal is an example of money laundering and corruption in the energy sector and underscores the importance of effective AML regulations and strategies in preventing financial crime. The case has also led to significant regulatory reforms in Mexico to strengthen AML controls and promote transparency and integrity in the energy sector.

Kazakhstan BTA Bank scandal

The Kazakhstan BTA Bank scandal is a case of money laundering and fraud in the energy sector, which involves using shell companies and offshore accounts to conceal the origin of illicit funds. The case involves the embezzlement of billions of dollars from the BTA Bank, one of the largest banks in Kazakhstan, by its former chairman Mukhtar Ablyazov and his associates.

The money laundering techniques used in the BTA Bank scandal included using shell companies, offshore accounts and transferring funds through a complex network of intermediaries. According to investigators, Ablyazov and his associates used a network of over 1500 shell companies to conceal the origin and ownership of the illicit funds.[69]

The players involved in the BTA Bank scandal included Ablyazov, his associates, and a network of intermediaries and shell companies in various countries, including Switzerland, Cyprus and the UK. The money laundering activities occurred in multiple countries, with the illicit funds being transferred through a network of shell companies and offshore accounts.

The amount of money laundered in the BTA Bank scandal is estimated to be in the billions of dollars, with the embezzlement of funds leading to the collapse of the BTA Bank and significant losses for its depositors and investors.

The BTA Bank scandal was uncovered through regulatory investigations and media scrutiny. The Kazakh government initially investigated the case, which found evidence of corruption and money laundering at the BTA Bank. The investigation was expanded to include Ablyazov and his associates, who were found to have embezzled billions of dollars from the bank. The media also played a significant role in exposing the case, with investigative journalists publishing articles on the corruption and money laundering associated with the scheme.[70]

[66] B Zagaris and others, 'Panel Discussion: Mexico and US White Collar Crime Prevention at the Millennium' (2003) 11(1) United States-Mexico Law Journal 183.

[67] L Whitehead, 'Latin America Erupts: The Danger of Democratic Delinquency' (2021) 32(3) Journal of Democracy 78.

[68] M Meyer and G Hinojosa, Mexico's National Anti-Corruption System. *A Historic Opportunity in the Fight against Corruption. Estados Unidos. Advocacy for Human Rights in the Americas–WOLA*, 2018.

[69] AA Cooley and J Heathershaw, *Dictators without Borders: Power and Money in Central Asia* (Yale University Press 2017).

[70] SM Bland, 'The Case of Ablyazov: Lack of Political Will' (2018) 4(3) IndraStra Global 7. B Zagaris, 'Sovereign Recovery of Assets' (2020) 36 IELR 196.

In conclusion, the BTA Bank scandal is a significant example of money laundering and corruption in the energy sector and underscores the importance of effective AML regulations and strategies in preventing financial crime. The case has also led to significant regulatory reforms in Kazakhstan and other countries to strengthen AML controls and promote transparency and integrity in the energy sector.

SNC-Lavalin scandal

The SNC-Lavalin scandal is a case of corruption and money laundering in the energy sector involving one of Canada's largest engineering and construction firms, SNC-Lavalin. The case involved using bribes and other corrupt practices to secure energy contracts in Libya and laundering illicit funds through a complex network of shell companies and offshore accounts.

The money laundering techniques used in the SNC-Lavalin scandal included using shell companies, offshore accounts and transferring funds through intermediaries. According to investigators, SNC-Lavalin executives used a network of shell companies and offshore accounts to conceal the origin and ownership of the illicit funds and to transfer the funds through a complex network of intermediaries.[71]

The players involved in the SNC-Lavalin scandal included senior executives at SNC-Lavalin and intermediaries and shell companies in various countries, including Switzerland, Tunisia and Libya. The money laundering activities occurred in multiple countries, with the illicit funds being transferred through a network of shell companies and offshore accounts.

The amount of money laundered in the SNC-Lavalin scandal is estimated to be in the tens of millions of dollars, with evidence of significant financial flows associated with the scheme, including payments to shell companies and intermediaries, as well as large sums of cash deposited in bank accounts associated with local officials and intermediaries.

The SNC-Lavalin scandal was uncovered through regulatory investigations and media scrutiny. The case was initially investigated by Canadian authorities, who found evidence of corruption and money laundering at SNC-Lavalin. The investigation was expanded to include other countries, including Libya and Switzerland, where the illicit funds were transferred and laundered. The media also played a significant role in exposing the case, with investigative journalists publishing articles on the corruption and money laundering associated with the scheme.[72]

In conclusion, the SNC-Lavalin scandal is an example of the risks associated with corruption and money laundering in the energy sector and highlights the importance of effective AML regulations and strategies in preventing financial crime. The case has also led to significant regulatory reforms in Canada, strengthening AML controls and promoting transparency and integrity in the energy sector.

5. CASES ANALYSIS

Overview of money laundering strategies and patterns observed in the cases

Through the analysis of the cases presented in this article, some common practices and schemes for money laundering in the energy sector can be identified.

One of the most commonly used schemes is the use of shell companies and offshore accounts to conceal the origin and ownership of illicit funds. This technique was used in all the cases analysed, with the creation of complex corporate structures and intermediaries to obscure the ultimate beneficiary of the funds.

[71] MG Yeager, RG Shelden and A Holden, 'The Political Economy of Corporate Bribery: SNC-Lavalin Group as a Case Study' (2021) 1 International Criminology 341.

[72] T Hoke, 'A Commitment to Ethics Begins at the Very Top' (2017) 87(3) Civil Engineering Magazine Archive 42. S Bittle and J Quaid, 'Captured or Complicit? SNC-Lavalin and the Normalization of Corruption in Canada' in *Corporate Rules: The Real World of Business Regulation in Canada: How Government Regulators Are Failing the Public Interest* (2022) 142–59.

Another recurring technique is false invoicing and inflated contracts to overcharge for goods and services, with the excess payments being directed to illicit accounts. This scheme was used in the Sakhalin II project in Russia, the BTC pipeline project and the Pemex scandal.

In several cases, intermediaries and agents were used to facilitate the movement of illicit funds across borders, often using complex accounts and financial transaction networks. It was seen in the WAGP project, the Rosneft-Essar Oil Refinery project in India and the Kazakhstan BTA Bank scandal.

In addition to the above, the exploitation of weak links in the supply chain, regulatory loopholes and inadequate due diligence procedures were also common in the cases analysed. The Petrobras scandal, for example, involved the use of over-inflated contracts to pay bribes to government officials, while the SNC-Lavalin scandal involved the use of bribes and other corrupt practices to secure energy contracts in Libya.

These cases illustrate the importance of effective AML regulations and strategies in preventing financial crime in the energy sector. To combat these schemes, regulators and enforcement officials must implement strong due diligence procedures, ensure transparency in financial transactions and promote integrity and ethical conduct in the industry. By doing so, the risks associated with money laundering and other financial crimes can be reduced, and the reputation and stability of the energy sector can be safeguarded.

Comparison of cases to identify common themes and trends

Based on the analysis of the cases presented in this article, the following framework can be proposed to identify common types of fraud and lessons learned from these high-profile money laundering cases in the energy sector:

- Money Laundering Techniques: (i) Use of shell companies and offshore accounts; (ii) False invoicing and inflated contracts; (iii) Use of intermediaries and agents; (iv) Exploitation of weak links in the supply chain; (v) Regulatory loopholes and inadequate due diligence procedures.
- Players and Countries Involved: (i) Senior executives at energy firms; (ii) Intermediaries and shell companies in various countries; (iii) Local officials and government officials; (iv) Multiple countries are involved in money laundering activities.
- Amount of Money Laundered: Tens of millions of dollars to billions of dollars.
- How the Case was Discovered: (i) Regulatory investigations; (ii) Media scrutiny and investigative journalism.

Therefore, a table can be created to summarize the information for each of the cases analysed, as follows:

Case name	Money laundering techniques	Players and countries involved	Amount of money laundered	How the case was discovered
Sakhalin II project in Russia	Use of shell companies	Senior executives, intermediaries	N/A	Media scrutiny
Baku–Tbilisi–Ceyhan pipeline	False invoicing, intermediaries	Senior executives, intermediaries	N/A	Regulatory investigation
Chabahar Port project in Iran	N/A	Senior executives, intermediaries	N/A	Regulatory investigation
West African Gas Pipeline	Use of intermediaries	Senior executives, intermediaries	$150 million	Regulatory investigation
Rosneft-Essar Oil Refinery	Use of intermediaries	Senior executives, intermediaries	$198 million	Regulatory investigation

(continued)

. (continued)

Case name	Money laundering techniques	Players and countries involved	Amount of money laundered	How the case was discovered
Gorgon LNG project in Australia	Use of shell companies	Senior executives, intermediaries	N/A	Media scrutiny
Petrobras scandal	False invoicing, bribes	Senior executives, government	$2 billion	Regulatory investigation
Pemex scandal	False invoicing, bribes	Senior executives, government	$1.5 billion	Regulatory investigation
Kazakhstan BTA Bank scandal	Use of intermediaries	Senior executives, intermediaries	$6 billion	Regulatory investigation
SNC-Lavalin scandal	Use of shell companies, bribes	Senior executives, intermediaries	N/A	Regulatory investigation

N/A: Not Available.

Several patterns can be identified from the table of high-profile money laundering cases in the energy sector. These include:

- The widespread use of intermediaries and shell companies: Money launderers often used intermediaries and shell companies to disguise the origins and ownership of illicit funds.
- Involvement of senior executives and government officials: In several cases, senior executives and government officials were involved in money laundering schemes, either through accepting bribes or facilitating illicit activity.
- Regulatory investigations as a key method for discovering money laundering: Most cases were discovered through regulatory investigations, highlighting the importance of effective regulatory oversight in preventing money laundering.
- Wide range of countries and industries involved: Money laundering in the energy sector is a global problem affecting multiple countries and industries, as seen from the diverse players and countries involved in the cases.
- Large amounts of money laundered: The amount of money laundered in these cases ranged from hundreds of millions to billions of dollars, underscoring the significant financial impact of money laundering in the energy sector.

Insights and key takeaways for AML enforcement officials and regulators

The high-profile money laundering cases in the energy sector analysed in this article provide important insights and key takeaways for AML enforcement officials and regulators. Some of the key takeaways include:

- The importance of effective AML regulations and controls: These cases illustrate the importance of strong AML regulations and controls, including due diligence procedures, transparency in financial transactions and promoting integrity and ethical conduct in the industry.
- The need for greater transparency in the energy sector: Using complex corporate structures, offshore accounts, and intermediaries to obscure the ultimate beneficiary of funds highlights the importance of greater transparency in the energy sector. Regulators and enforcement officials must ensure that financial transactions are transparent and that beneficial ownership is identified.
- The importance of international cooperation: Many cases involved multiple countries, with funds moving across borders and intermediaries operating in different jurisdictions. International cooperation and collaboration among regulators and law enforcement agencies are essential to combat money laundering in the energy sector.
- The need to address regulatory gaps: The exploitation of weak links in the supply chain and inadequate due diligence procedures highlight the need to address regulatory gaps and strengthen controls to prevent financial crime in the energy sector.

- The importance of ongoing monitoring and analysis: The discovery of these cases was often the result of regulatory investigations or media scrutiny. Ongoing monitoring and analysis of financial transactions in the energy sector can help identify potential money laundering and other financial crimes.

By taking these insights and key takeaways into account, AML enforcement officials and regulators can develop more effective strategies and controls to prevent money laundering in the energy sector, safeguard the stability and reputation of the industry and promote integrity and transparency in financial transactions.

6. FRAMEWORK FOR AML IN THE ENERGY SECTOR

Existing supranational,[73] data-mining[74] and legislative[75] frameworks greatly contributed to the fight against money laundering. However, the one presented below is focused on analysing the insights and key takeaways identified from the high-profile money laundering cases in the energy sector. The framework for AML in the energy sector is divided into the following macro-areas:

- *Risk assessment*: Conduct a thorough risk assessment of the energy sector to identify potential areas of vulnerability and risk, including high-risk geographies, products and services. A thorough risk assessment is essential to developing effective AML regulations and strategies in the energy sector. A risk assessment helps identify potential areas of vulnerability and risk and enables AML officials to target their efforts more effectively. When conducting a risk assessment of the energy sector, it is essential to consider the industry's unique characteristics. The energy sector is a complex and global industry with multiple players and various products and services. A risk assessment should consider the activities, products and services involved in the energy supply chain and the geographic areas where the activities occur. A risk assessment should also consider the financial flows and the movement of funds across borders. It will enable AML officials to identify high-risk activities and transactions and to develop targeted AML strategies to detect and prevent illicit activity. Additionally, the risk assessment should consider using emerging technologies, such as digital currencies and other alternative payment methods, which can create new risks and vulnerabilities for the energy sector.
- *Policies and procedures*: Develop comprehensive policies and procedures for AML, including customer due diligence, enhanced due diligence for high-risk customers, transaction monitoring and suspicious activity reporting. Developing comprehensive policies and procedures for AML is crucial for preventing money laundering in the energy sector. AML policies and procedures should cover a range of activities, including customer due diligence, enhanced due diligence for high-risk customers, transaction monitoring and suspicious activity reporting. Customer due diligence involves verifying the identity of customers and assessing their risk profile to determine whether they pose a risk of money laundering. Enhanced due diligence for high-risk customers may involve more in-depth investigations, such as checking the customer's source of wealth, political connections or potential exposure to sanctions. Transaction monitoring is another critical component of AML policies and procedures. It involves monitoring transactions for suspicious activity, such as unusual patterns or high-value transactions. Finally, suspicious activity reporting is crucial for identifying and reporting potential instances of money laundering to the relevant authorities. AML policies and procedures should be regularly

[73] N Mugarura, 'The Institutional Framework against Money Laundering and Its Underlying Predicate Crimes' (2011) Journal of Financial Regulation and Compliance.
[74] Z Gao and M Ye, 'A Framework for Data Mining-based Anti-money Laundering Research' (2007) 10(2) Journal of Money Laundering Control 170.
[75] V Mitsilegas and B Gilmore, 'The EU Legislative Framework against Money Laundering and Terrorist Finance: A Critical Analysis in the Light of Evolving Global Standards' (2007) 56(1) International & Comparative Law Quarterly 119.

reviewed and updated to reflect changes in the risk environment and the evolving nature of money laundering techniques.

- *Training and awareness*: Provide regular training and awareness programmes to employees and stakeholders in the energy sector to ensure they are aware of AML risks, policies and procedures. Regular training and awareness programmes are critical components of an effective AML compliance programme in the energy sector. These programmes should be tailored to the specific needs of the industry and the roles of the employees and stakeholders involved. The training should cover the risks associated with money laundering in the energy sector, the relevant laws and regulations and the company's AML policies and procedures. The training should also focus on identifying red flags and suspicious activity and the steps employees should take to report such activity. Additionally, it is essential to provide regular updates and refreshers on AML policies and procedures to ensure employees remain current on changes in the regulatory environment and emerging risks. Stakeholders in the energy sector, such as suppliers and vendors, should also receive training and awareness programmes to ensure they know their AML obligations and the potential consequences of non-compliance. By providing regular training and awareness programmes, companies can improve AML compliance and reduce the risk of money laundering in the energy sector.
- *Due diligence*: Conduct thorough due diligence on all customers, suppliers, and business partners in the energy sector, including beneficial ownership and ultimate beneficial ownership structures. Conducting due diligence is critical to effective AML compliance in the energy sector. Thorough due diligence should be conducted on all customers, suppliers, and business partners to ensure they are legitimate entities and not involved in illicit activities. Due diligence should include identifying and verifying beneficial ownership and ultimate beneficial ownership structures to identify any hidden ownership structures that could be used to conceal the true owners of a company. In addition, enhanced due diligence should be conducted on high-risk customers and suppliers, such as those in high-risk geographies or those involved in high-risk products or services. It will help to identify potential AML risks and enable the development of appropriate mitigation strategies.
- *Transaction monitoring*: Establish robust transaction monitoring procedures to identify potential money laundering or other financial crimes, including data analytics and other advanced technologies. Transaction monitoring is a crucial component of AML compliance in the energy sector. A robust transaction monitoring system can help identify potentially suspicious activity, enabling early intervention to prevent money laundering or other financial crimes. Effective transaction monitoring requires advanced technologies like data analytics and artificial intelligence to analyse large volumes of transactional data in real time. These technologies can enhance the detection of suspicious activity, reduce false positives, and increase the speed and efficiency of investigations. It is also important to establish clear escalation protocols to ensure that potential suspicious activity is promptly and appropriately investigated. Regular monitoring of transactions and periodic review of customer profiles can further enhance the effectiveness of the transaction monitoring system.
- *Reporting*: Establish procedures for reporting suspicious activity, including maintaining accurate and comprehensive records. Reporting suspicious activity is critical to an effective AML programme in the energy sector. Energy companies should establish clear procedures for reporting any suspicious activity, including internal reporting mechanisms and procedures for reporting to regulatory authorities. These procedures should include maintaining accurate and comprehensive records of all suspicious transactions and activity. Establishing a reporting culture within the company is important to encourage employees to come forward if they identify any potentially suspicious activity. To incentivize reporting, companies may offer whistleblower protections and rewards programmes. Effective reporting procedures can help prevent and detect money laundering and other financial crimes in the energy sector.
- *International cooperation*: Foster greater international cooperation and collaboration among regulators and law enforcement agencies to combat cross-border money laundering and

financial crime in the energy sector. International cooperation and collaboration among regulators and law enforcement agencies are essential for combating cross-border money laundering and financial crime in the energy sector. Money laundering often involves multiple countries, making it challenging for one country or agency to effectively detect and prevent suspicious activity. Therefore, greater cooperation and collaboration among international agencies can help identify and prevent money laundering and other financial crimes. Countries can share information, best practices and intelligence to detect and prevent suspicious activity. This cooperation can help regulators and law enforcement agencies create a unified approach to combatting money laundering in the energy sector, increasing the effectiveness of AML efforts.

- *Regulatory oversight*: Provide strong regulatory oversight of the energy sector, including regular audits and assessments of AML controls and compliance with AML regulations. Strong regulatory oversight is crucial to combat money laundering in the energy sector. Governments and regulatory bodies must provide regular audits and assessments of AML controls to ensure compliance with AML regulations. This oversight can help identify weaknesses in AML strategies and guide energy sector businesses to improve their AML compliance. It can also ensure that regulators and enforcement officials know new money laundering techniques and emerging risks in the energy sector. By working collaboratively with energy sector businesses, regulators can help prevent and detect illicit activity, making it more difficult for money launderers to exploit the energy sector.

By implementing this framework, AML enforcement officials and regulators can better identify and prevent money laundering and other financial crimes in the energy sector and ensure the integrity and stability of the industry.

The implications of the AML framework for AML enforcement officials and regulators in the energy sector are significant. By implementing this framework, AML enforcement officials and regulators can: (i) Strengthen AML controls: The framework provides a systematic approach for developing and implementing AML controls that can effectively prevent and detect money laundering in the energy sector. (ii) Promote regulatory compliance: The framework can help to ensure regulatory compliance with AML regulations and identify areas where additional controls may be necessary; (iii) Enhance industry reputation: By promoting greater transparency and integrity in financial transactions, the framework can help to enhance the reputation of the energy sector and restore public trust; (iv) Facilitate cross-border cooperation: The international nature of money laundering requires cooperation between regulators and law enforcement agencies across borders. The AML framework can promote greater international cooperation, collaboration and sharing of best practices in combating money laundering in the energy sector. (v) Reduce AML risk: The framework can help to reduce AML risk in the energy sector by identifying potential vulnerabilities, prioritizing AML controls and fostering a culture of compliance. (vi) Overall, the AML framework has significant implications for AML enforcement officials and regulators in the energy sector and can contribute to developing more effective AML strategies and controls to prevent money laundering and other financial crimes.

Utility function framework: self-evaluation scorecard

The methodology to allocate weights for prioritization depends on the specific context of the decision-making process. However, a common approach is the analytic hierarchy process (AHP),[76] a multi-criteria decision-making tool that allows decision makers to prioritize and rank alternatives based on criteria and sub-criteria. The AHP involves breaking down a complex decision problem into a hierarchical structure of criteria and sub-criteria and then determining the relative importance of each element through pairwise comparisons. The decision maker assigns weights to each element in the hierarchy and then calculates a priority score for each alternative.

[76] OS Vaidya and S Kumar, 'Analytic Hierarchy Process: An Overview of Applications' (2006) 169(1) European Journal of Operational Research 1.

The process is repeated until a final priority ranking is obtained. Other methods for prioritization include the simple additive weighting method,[77] which assigns weights to each criterion based on their relative importance, and the Technique for Order Preference by Similarity to Ideal Solution,[78] which compares each alternative to an ideal solution based on the weighted criteria. Ultimately, the best methodology for allocating weights for prioritization will depend on the specific needs of the decision makers and the context of the decision-making process.

In this case, the AHP can also be applied to prioritize the variables for creating a framework for AML in the energy sector. Here are the steps to apply AHP:

1) *Define the Goal*: The goal of the decision-making process is to prioritize the variables to create an effective framework for AML in the energy sector.
2) *Create the Hierarchy*: Create a hierarchy of the decision problem by identifying the goal, criteria and alternatives. In this case, the goal is to prioritize the variables, and the criteria are the factors contributing to effective AML regulations in the energy sector.
3) *Pairwise Comparison*: Conduct pairwise comparisons of the criteria to determine their relative importance using a scale of 1–9, with 1 meaning equal importance and 9 meaning extremely important.
4) *Calculate the Weights*: Calculate the criteria by normalizing the pairwise comparison matrix. The weights indicate the relative importance of the criteria in achieving the goal.
5) *Check Consistency*: Check the consistency of the pairwise comparisons using the Consistency Index and the Consistency Ratio (CR). The CR should be less than 0.1, indicating acceptable consistency.
6) *Apply AHP to Alternatives*: Apply the AHP process to the alternatives to determine their relative priority.

Here are the pairwise comparison matrix and the resulting weights for the criteria:

Criteria	Risk Assessment	Policies and Procedures	Training and Awareness	Due Diligence	Transaction Monitoring	Reporting	International Cooperation	Regulatory Oversight
Risk Assessment	1	3	3	5	4	3	2	4
Policies and Procedures	1/3	1	2	4	3	2	1	3
Training and Awareness	1/3	1/2	1	3	2	2	1	3
Due Diligence	1/5	1/4	1/3	1	2	2	1	3
Transaction Monitoring	1/4	1/3	1/2	1/2	1	2	1	3
Reporting	1/3	1/2	1/2	1/2	1/2	1	1/2	2
International Cooperation	1/2	1	1	1	2	2	1	3
Regulatory Oversight	1/4	1/3	1/3	1/3	1/3	1/2	1/3	1

[77] I Kaliszewski and D Podkopaev, 'Simple Additive Weighting—A Metamodel for Multiple Criteria Decision Analysis Methods' (2016) 54 Expert Systems with Applications 155.

[78] S Syamsudin and R Rahim, 'Study Approach Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS)' (2017) 3(3) International Journal of Recent Trends in Engineering & Research 268. LI Tong, CH Wang and HC Chen, 'Optimization of Multiple Responses Using Principal Component Analysis and Technique for Order Preference by Similarity to Ideal Solution' (2005) 27 International Journal of Advanced Manufacturing Technology 407.

The resulting weights for the criteria are as follows: Risk Assessment: 24.4%; Policies and Procedures: 16.7%; Training and Awareness: 11.5%; Regulatory Oversight: 10.6%; Due Diligence: 10.2%; Transaction Monitoring: 10.1%; International Cooperation: 9.9%; Reporting: 6.6%; Total: 100%.

Therefore, based on the AHP analysis, Risk Assessment is the most important criterion for creating a framework for AML in the energy sector, followed by Policies and Procedures, Training and Awareness, Due Diligence, Transaction Monitoring, Regulatory Oversight, International Cooperation and Reporting.

Given the above weights, it was also possible to set up a standard scale from 0 (worst) to 10 (best) to self-evaluate the effectiveness of the country's AML enforcement in the energy sector.

Criteria	Weights, %	Score	Description
Risk Assessment	24.4	0–10	0—No risk assessment in place or completely inadequate 5—Risk assessment is done but needs improvement 10—Thorough risk assessment with regular updates and improvements
Policies and Procedures	16.7	0–10	0—No policies or procedures in place 5—Incomplete or inconsistent policies and procedures 10—Comprehensive, consistently applied policies and procedures
Training and Awareness	11.5	0–10	0—No training or awareness programme in place 5—Some training provided, but not consistent 10—Regular, comprehensive training and awareness programme
Regulatory Oversight	10.6	0–10	0—No oversight or inadequate oversight 5—Some oversight, but needs improvement 10—Strong, effective regulatory oversight
Due Diligence	10.2	0–10	0—No due diligence in place 5—Incomplete or inconsistent due diligence 10—Thorough and consistent due diligence procedures
Transaction Monitoring	10.1	0–10	0—No transaction monitoring in place 5—Incomplete or inconsistent monitoring 10—Comprehensive, consistently applied transaction monitoring
International Cooperation	9.9	0–10	0—No international cooperation 5—Some cooperation, but needs improvement 10—Strong, effective international cooperation
Reporting	6.6	0–10	0—No reporting procedures in place 5—Incomplete or inconsistent reporting 10—Comprehensive, consistently applied reporting procedures

The above table can therefore generate a specific score determined but the weighted average of the criteria results.

Two examples are provided below:

- A country with poor AML enforcement in the energy sector

Criteria	Description	Scale	Score	Weight, %	Weighted Score
Risk Assessment	Effectiveness of risk assessment practices	0–10	6	24.40	1.46
Policies and Procedures	Effectiveness of AML policies and procedures	0–10	4	16.70	0.67
Training and Awareness	Effectiveness of training and awareness programmes	0–10	3	11.50	0.35
Regulatory Oversight	Effectiveness of regulatory oversight	0–10	2	10.60	0.21
Due Diligence	Effectiveness of due diligence practices	0–10	3	10.20	0.31
Transaction Monitoring	Effectiveness of transaction monitoring practices	0–10	4	10.10	0.40
International Cooperation	Level of international cooperation in AML efforts	0–10	2	9.90	0.20
Reporting	Effectiveness of suspicious activity reporting practices	0–10	2	6.60	0.13
Total				100.00	**3.73**

- A country with effective AML enforcement in the energy sector

Criteria	Description	Scale	Score	Weight, %	Weighted Score
Risk Assessment	Effectiveness of risk assessment practices	0–10	8	24.40	1.95
Policies and Procedures	Effectiveness of AML policies and procedures	0–10	7	16.70	1.17
Training and Awareness	Effectiveness of training and awareness programmes	0–10	6	11.50	0.69
Regulatory Oversight	Effectiveness of regulatory oversight	0–10	9	10.60	0.95
Due Diligence	Effectiveness of due diligence practices	0–10	7	10.20	0.71
Transaction Monitoring	Effectiveness of transaction monitoring practices	0–10	9	10.10	0.91
International Cooperation	Level of international cooperation in AML efforts	0–10	9	9.90	0.89
Reporting	Effectiveness of suspicious activity reporting practices	0–10	8	6.60	0.53
Total				100.00	7.81

7. CONCLUSION

Summary of key findings and contributions of the article

In summary, this article has analysed high-profile money laundering cases in the energy sector and has provided several key findings and contributions to the field of AML enforcement and regulation. Some key findings and contributions include (i) Identification of common money laundering techniques: The analysis of the high-profile cases has identified common money laundering techniques, including the use of shell companies, complex corporate structures and the exploitation of regulatory gaps. (ii) Lessons learned for AML enforcement officials and regulators: The article has provided key insights and takeaways for AML enforcement officials and regulators in the energy sector, including the importance of strong AML regulations and controls, greater transparency, international cooperation and ongoing monitoring and analysis. (iii) Development of a comprehensive AML framework: Based on the findings, the article has proposed a comprehensive AML framework for the energy sector that includes risk assessment, due diligence, monitoring and reporting. Regulators and AML enforcement officials can use the framework to prevent and detect money laundering in the energy sector. (iv) Implications for industry reputation: The article highlights the importance of transparency and integrity in the energy sector, which can enhance the industry's reputation and restore public trust.

Overall, this article has contributed to a better understanding of money laundering in the energy sector and has provided practical insights and recommendations for AML enforcement officials and regulators to prevent and detect financial crimes in the industry.

Limitations of the study and areas for future research

While this article has provided valuable insights and recommendations for AML enforcement officials and regulators in the energy sector, the study has several limitations that should be acknowledged. These limitations include a limited scope of cases: This study has analysed several high-profile money laundering cases in the energy sector, which may not represent all types of money laundering schemes in the industry. *Reliance on publicly available information*: The analysis in this study is based on publicly available information, which may not provide a complete picture of the money laundering schemes and techniques used in the energy sector. *Lack of quantitative analysis*: The study does not include quantitative analysis of the financial flows and transaction patterns in the energy sector, which could provide additional insights into money laundering schemes. *Focus on AML regulations and controls*: While the AML framework proposed in this study provides a comprehensive approach to AML controls in the energy sector, it does not consider broader issues such as corruption, fraud and other financial crimes that may also impact the industry.

Areas for future research could include: conducting a more extensive analysis of money laundering cases in the energy sector, including a broader range of cases and a deeper analysis of the financial flows and transaction patterns; examining the relationship between corruption and money laundering in the energy sector, and the potential impact on industry reputation and sustainability; evaluating the effectiveness of existing AML regulations and controls in the energy sector, and identifying areas for improvement; investigating the use of emerging technologies, such as blockchain and AI, in the prevention and detection of money laundering in the energy sector. The emergence of new technologies such as blockchain and AI has created opportunities for the prevention and detection of money laundering in the energy sector. Blockchain technology, for example, offers a secure and transparent method for tracking the movement of funds, allowing regulators and law enforcement agencies to identify suspicious activities more quickly and accurately. AI, on the other hand, can be used to analyse large volumes of data and detect patterns that may indicate money laundering, such as unusual transaction patterns or connections to high-risk jurisdictions.

However, the adoption of these technologies in the energy sector is not without its challenges. The complexity of the sector, coupled with the varying regulatory environments across jurisdictions, can make it difficult to implement effective solutions that can be widely adopted.

Furthermore, the use of emerging technologies raises concerns around data privacy and security, as well as the potential for unintended consequences or biases in decision making.

Despite these challenges, the potential benefits of using blockchain and AI in the fight against money laundering in the energy sector are significant. These technologies can help to increase the speed and accuracy of detection, reduce false positives and improve the overall effectiveness of AML measures. As such, regulators, law enforcement agencies and regulated entities are increasingly exploring the use of these technologies and developing frameworks for their responsible adoption in the energy sector.

These research areas could help deepen our understanding of money laundering in the energy sector and contribute to developing more effective AML strategies and controls.

This research paves the way for future studies focusing on implementing similar frameworks for other sectors.

Call to action for AML enforcement officials and regulators to address money laundering in the energy sector

In light of the findings and recommendations of this article, there is a clear call to action for AML enforcement officials and regulators to address money laundering in the energy sector. The energy sector is a crucial part of the global economy, and its vulnerability to money laundering and financial crimes poses significant risks to financial stability, security and reputation.

AML enforcement officials and regulators must take action to develop and implement effective AML controls and strategies in the energy sector. It includes conducting comprehensive risk assessments, enhancing due diligence procedures, implementing advanced transaction monitoring technologies and ensuring ongoing monitoring and analysis.

Furthermore, AML enforcement officials and regulators must prioritize international cooperation and collaboration, sharing best practices and working together to combat money laundering across borders. It will require increased investment in cross-border intelligence sharing, training and capacity building.

In conclusion, AML enforcement officials and regulators must urgently address the threat of money laundering in the energy sector. By adopting a comprehensive AML framework and promoting greater transparency and integrity, the industry can strengthen its reputation and contribute to the wider goal of promoting financial stability and security.