Accounting for Cloud AI GPU Capacity Contracts Under IFRS 16: A Proposed Recognition and Measurement Framework

Assist. Prof. Dr. Ammar Ghazi Ibrahim Al-Ezzi
Department of Accounting, College of Administration and Economics, University of Diyala, 32001, Diyala, Iraq.
ammar.ezzi82@uodiyala.edu.iq

Abstract

The advent of generative Artificial Intelligence (AI) and Large Language Models (LLMs) has led to a substantial demand for specialised high-performance computing resources, particularly Graphics Processing Unit (GPU) clusters. Enterprises are moving away from buying physical hardware outright and instead are entering into multi-year cloud-service contracts for computing capacity with hyperscale providers. In practice, there are significant challenges in applying existing financial reporting requirerments, and preparers often classify these arrangements as executory service contracts (operating expenses), based on the assumption that software-virtualisation and standardized contractual substitute clauses preclude lease accounting. This paper sets out a thorough Recognition and Measurement Framework for cloud AI GPU capacity contracts under International Financial Reporting Standard 16 (Leases). Specifically, it formalises (1) a proposed decision-tree model that prescribes assessment of lease existence prior to accounting policy election consideration; (2) an objective approach to separating bare-metal-hardware lease components from non-lease services (orchestration, cooling and network); (3) an initial measurement model for duration-matched Incremental Borrowing Rates (IBR) and take-or-pay capacity floors; and (4) subsequent measurement mechanics to address rapid technological obsolescence and IAS 36 impairment testing. Methodologically, the study adopts a descriptive-analytical approach, supported by a normative accounting framework and scenario-based numerical analysis to evaluate the recognition and measurement of cloud AI GPU capacity contracts under IFRS 16. The framework is tested with the help of an illustrative numerical application in three representative scenarios (Dedicated Cluster, Shared Substitutable Capacity and Hybrid Minimum Commitment) together with full journal-entry postings, reconciled financial statements extracts, and financial-ratio analyses. The findings show that requiring qualifying GPU contracts to be capitalised makes previously off-balance-sheet lease obligation visible and improves reporting transparency. The study recommends that entities assess cloud AI GPU capacity contracts based on the substantive lease identification criteria of IFRS 16, particularly asset identification, supplier substitution rights, and control over asset use, rather than relying solely on contractual classifications.

Keywords: IFRS 16 Leases, Cloud AI Computing, GPU Compute Capacity, Right-of-Use Asset, Lease Liability, Substantive Substitution Rights.

المحاسبة عن عقود الطاقة الاستيعابية لوحدات معالجة الرسوميات (GPU) للذكاء الاصطناعي السحابي في ظل المعيار الدولي لإعداد التقارير المالية IFRS 16: إطار مقترح للاعتراف والقياس

ا. م. د. عمار غازي إبراهيم العزي
قسم المحاسبة، كلية الإدارة والاقتصاد، جامعة ديالى، ديالى، 32001، العراق
ammar.ezzi82@uodiyala.edu.iq

الملخص

أدى ظهور الذكاء الاصطناعي التوليدي (AI) والنماذج اللغوية الكبيرة (LLMs) إلى زيادة كبيرة في الطلب على موارد الحوسبة عالية الأداء والمتخصصة، ولا سيما مجموعات وحدات معالجة الرسوميات .(GPU) وتتجه الشركات بصورة متزايدة نحو الاستغناء عن شراء الأجهزة المادية بصورة مباشرة، والاعتماد بدلاً من ذلك على إبرام عقود خدمات سحابية متعددة السنوات للحصول على القدرات الحاسوبية من كبار مزودي الخدمات السحابية. وفي الواقع العملي، تبرز تحديات كبيرة في تطبيق متطلبات إعداد التقارير المالية القائمة، إذ غالباً ما يصنف معدّو التقارير المالية هذه الترتيبات بوصفها عقود خدمات تنفيذية تُحمَّل تكاليفها على المصروفات التشغيلية، استناداً إلى افتراض أن المحاكاة الافتراضية للموارد الحاسوبية والبنود التعاقدية المعيارية المتعلقة بحقوق الاستبدال تحول دون تطبيق المعالجة المحاسبية لعقود الإيجار. يقدم هذا البحث إطاراً شاملاً للاعتراف والقياس المحاسبي لعقود القدرات الحاسوبية السحابية لوحدات معالجة الرسوميات المستخدمة في تطبيقات الذكاء الاصطناعي، وفقاً للمعيار الدولي لإعداد التقارير المالية رقم (16) الخاص بعقود الإيجار (IFRS 16) على وجه التحديد، ويتضمن الإطار: (1) نموذجاً مقترحاً لشجرة القرار يقتضي تقييم وجود عقد إيجار قبل النظر في اختيار السياسة المحاسبية؛ (2) منهجاً موضوعياً لفصل مكونات الإيجار المتعلقة بالأجهزة المادية المخصصة عن مكونات الخدمات غير الإيجارية، مثل إدارة الموارد الحاسوبية والتبريد والشبكات، (3) نموذجاً للقياس الأولي يعتمد على معدلات الاقتراض الإضافية (IBR) المتوافقة مع مدة العقد، والحدود الدنيا الملزمة للقدرات الحاسوبية وفق ترتيبات الدفع أو الاستخدام(Take-or-Pay) ، (4) آليات للقياس اللاحق تعالج التقادم التكنولوجي السريع واختبارات انخفاض القيمة وفقاً لمعيار المحاسبة الدولي رقم(IAS 36) (36) ، ومن الناحية المنهجية، يعتمد البحث المنهج الوصفي التحليلي مدعوماً بإطار محاسبي معياري وتحليل عددي قائم على السيناريوهات، بهدف تقييم الاعتراف والقياس المحاسبي لعقود القدرات الحاسوبية السحابية لوحدات معالجة الرسوميات المستخدمة في الذكاء الاصطناعي وفقاً لمعيار IFRS 16، يُختبر الإطار المقترح من خلال تطبيق عددي توضيحي يتضمن ثلاثة سيناريوهات تمثيلية، هي: مجموعات وحدات معالجة الرسوميات المخصصة Dedicated) (Cluster، والقدرات الحاسوبية المشتركة القابلة للاستبدال(Shared Substitutable Capacity) ، والعقود الهجينة ذات الحد الأدنى من الالتزامات(Hybrid Minimum Commitment) ، إلى جانب إعداد القيود المحاسبية الكاملة، ومقتطفات من القوائم المالية المتطابقة حسابياً، وتحليلات النسب المالية. وتُظهر النتائج أن رسملة عقود وحدات معالجة الرسوميات التي تستوفي شروط الاعتراف بعقود الإيجار تؤدي إلى إظهار التزامات الإيجار التي كانت سابقاً خارج قائمة المركز المالي، وتسهم في تعزيز شفافية التقارير المالية. ويوصي البحث بضرورة قيام الوحدات الاقتصادية بتقييم عقود القدرات الحاسوبية السحابية لوحدات معالجة الرسوميات المستخدمة في الذكاء الاصطناعي استناداً إلى المعايير الجوهرية لتحديد عقود الإيجار المنصوص عليها في IFRS 16، ولا سيما تحديد الأصل، وحقوق المورد في الاستبدال، والسيطرة على استخدام الأصل، بدلاً من الاعتماد حصراً على التصنيفات التعاقدية.

الكلمات المفتاحية: المعيار الدولي لإعداد التقارير المالية رقم (16) الخاص بعقود الإيجار، الحوسبة السحابية للذكاء الاصطناعي، الطاقة الحوسبية لوحدات معالجة الرسوميات (GPU)، أصل حق الاستخدام، التزام الإيجار، حقوق الاستبدال الجوهرية.

1. Introduction

1.1 Background: Growth of Cloud AI and GPU Computing Contracts

The commercial explosion of artificial intelligence (AI) and deep-learning architecture has changed business computing need dramatically. Training foundational models and high-throughput inference requires specialised parallel processing infrastructure, primarily in the form of powerful Graphics Processing Units (GPUs) and specialised accelerators [1]. The high capital expenditure (CapEx), supply constraints, and rapid obsolescence associated with the construction of private supercomputing facilities are pushing enterprises to multi-year contractual obligations with commercial hyperscale cloud service providers ("Big Cloud", e.g., Amazon Web Services [AWS], Microsoft Azure, and Google Cloud Platform [GCP]) for computing power procurement [1]. These agreements have changed from transactional use of utilities to structural, multi-million-dollar commitments. Providers sell a “unit of compute” [1] or a conventional data center asset package. In practice, corporate contracts include dedicated physical clusters, multi-year reserved capacity commitments, and take-or-pay contracts to ensure compute availability in the face of global semiconductor supply friction [1].

1.2 Research Problem

IFRS have yet to determine the financial reporting treatment of cloud AI GPU capacity arrangements, notwithstanding the considerable financial commitments involved [2]. However, in corporate practice, cloud computing agreements are typically viewed as executory service contracts [3]. The justification for this classification is typically the use of software virtualisation and standard contractual conditions that allow the supplier to be replaced [3].

Thus, large non-cancellable commitments for dedicated computing capacity are typically off-balance sheet [3]. This omission decreases financial statements’ comparability, conceals the actual financial leverage and distorts important measures such as ROA, EBITDA and debt covenant ratios [4], [5], [6]. Moreover, preparers lack practical guidance on how to unbundle components, determine discount rates, and account for rapid technological obsolescence when such agreements bundle physical hardware access with managed orchestration software and network bandwidth [3], [7], [8]. The study seeks to answer the following research questions:

1. RQ1: When does a cloud AI GPU capacity arrangement transfer the right of control of an identifiable asset under IFRS 16, instead of an executory service arrangement?
2. 2.RQ2: How to assess the supplier replacement rights (IFRS 16.B14) when practical and economic restrictions impose on the supplier with technical latency requirements, specialised interconnects and market hardware shortages?
3. RQ3: What measuring methodology should be used to disaggregate contract components, identify the original ROU asset and lease obligation and subsequently account for rapid technological obsolescence under IAS 36?
4. RQ4: What are the illustrative implications of capitalising cloud GPU capacity contracts on company financial position, leverage measures, operating performance and compliance with debt covenants?

1.3 Research Objectives

The primary objective of this research is to construct an operational, normative Recognition and Measurement Framework for cloud AI GPU computing capacity contracts under IFRS 16. Specific objectives include:

Technical and contractual characteristics of cloud GPU infrastructure are analysed (dedicated bare metal nodes, MIG hardware partitioning, virtual machine slices).

Digital computing assets with high-performance that meet the IFRS 16 lease identification criterion (IFRS 16.9-B33).

Designing a structured Decision Tree Model and integrated summary matrix to connect contractual inputs to accounting outputs

Set clear mathematical and operational rules on (a) the separation of components, (b) the estimation of rIBR and (c) the future amortisation/impairment.

1.4 Research Significance and Scope

The paper presents a novel combination of digital technology and accounting standards, which links the economic reality of "cloud assets" [1] with the accounting principle of substance over legal form [3]. This guidance will be useful to preparers, financial analysts and independent auditors.
Scope and Limitations: 10 This can be applied to enterprise customer arrangements (lessee view) for cloud-based AI GPU infrastructure under IFRS. It is focused on IFRS 16 and the interaction between IAS 38, IAS 16 and IAS 36 .The lease capitalisation model does not cover executory services, such as short-term, non-committal spot instances and consumer SaaS subscriptions (e.g. end-user chatbot queries).

2. Literature Review and Conceptual Foundations

2.1 Accounting for Cloud Computing Arrangements

The accounting classification of cloud computing arrangements has changed with technology delivery methods, including Infrastructure-as-a-Service (IaaS), Platform-as-a-Service (PaaS), and Software-as-a-Service (SaaS) [1], [9]. Traditionally, on-premises computing consisted of different assets, purchased hardware capitalised as Property, Plant, and Equipment under IAS 16, and perpetual software licenses as intangible assets under IAS 38 [3], [9]. Cloud software has been tackled by the IFRS Interpretations Committee in two important agenda decisions [3]:

- Right of Configuration or Customisation in a Cloud computing Arrangement (April 2021): IFRIC decided that a SaaS contract creates an intangible asset only when the customer can take possession of the program without significant penalty or control of the underlying code.
- Costs of Configuration or Customisation in a Cloud Computing Arrangement (April 2021): IFRIC clarified that the costs of installation and customisation of cloud computing arrangements may not be capitalised unless they result in independent code controlled by the client in accordance with IAS 38 otherwise, they are expensed as the services are performed.

However, they are designed with the idea of centralised, multi-tenant software systems [1], [9]. The high-density GPU clusters on which today's generative AI workloads run are very dependent on

physical architecture and dedicated capacity and so must be carefully evaluated against the leasing criteria.

2.2 Lease Accounting under IFRS 16

IFRS 16 was a radical overhaul of lease accounting, replacing the 'risks-and-rewards' model of IAS 17 with the 'Right-of-Use' (ROU) model [3]. IAS 17 classified contracts as either financing or operating leases, which allowed preparers to frame agreements to gain off-balance-sheet status [10], [11]. IFRS 16 removed this distinction for lessees by requiring that any contract that conveys the right to control the use of an identified asset for a period of time in exchange for consideration must be recognised on-balance-sheet as a ROU asset and a corresponding lease liability [3], [12].

Balance Sheet Expansion and Increased Leverage: Studies across the European and international markets confirm significant mechanical increases in reported assets and liabilities and increases in Debt-to-Equity (D/E) and Debt-to-Assets (D/A) ratios [4], [6]. Changes in operating performance measures: Operating costs will no longer include operating lease rental expenditures and will instead be comprised of straight-line depreciation of ROU assets and front-loaded interest expense on the lease liabilities. This categorisation systematically increases EBITDA and operating cash flows but decreases net income in the early years of contracts [5], [11]. Liquidity and Covenants: current ratios fall due to current lease liabilities, which can affect credit assessments and loan covenants [13].

2.3 Accounting Challenges of AI Assets

Afrizal and Rosmaria (2026) explore the accounting of corporate AI assets within the framework of the International Financial Reporting Standards (IFRS) and identify five structural challenges: unclear recognition criteria, measurement model constraints, rapid technical obsolescence, data valuation challenges, and lack of disclosure. They point out that physical servers are dealt with under IAS 16 and proprietary code under IAS 38. However, powerful AI accelerators lose their commercial value in 12-24 months due to rapid generational upgrades in semiconductor design (e.g. from NVIDIA Hopper to Blackwell architectures) [2]. Leitner-Hanetseder and Lehner (2023) also address the application of AI-powered information within the framework of IFRS.

The authors point to the continuous iterative integration of data, algorithms and computer infrastructure which challenges traditional linear stage-gated accounting models [14]. Choi (2021) investigates the auditing issues of IFRS 16 and reports that the verification of the completeness of contracts and the proper measurement of Incremental Borrowing Rates (r_IBR) in complicated operational settings significantly raise the estimation risk [15].

2.4 Research Gap and Contribution

Existing literature has covered accounting for cloud computing [9], macroeconomic issues in compute markets [2], and general AI asset classification [2]. However, there is a gap in the specialised literature on accounting on the adoption of IFRS 16 in enterprise cloud AI GPU capacity contracts. Current accounting research is heavily concentrated on historical physical assets (e.g. aircraft, property, vehicles) or general software arrangements. The technical and contractual details of dedicated and reserved GPU computing are relatively unexplored. This paper contributes to filling that gap by developing an integrated Recognition and Measurement Framework that operationalises the IFRS 16 criteria for digital compute infrastructure, provides objective component unbundling procedures and incorporates explicit technological obsolescence mechanisms under IAS 36.

3. Technical and Contractual Characteristics of Cloud AI GPU Capacity

3.1 GPU Infrastructure: Dedicated, Shared, and Virtualized Resources

1. Bare-Metal Dedicated GPU Clusters. In this case the cloud-provider offers dedicated physical access to certain server chassis that are loaded with specialised GPU baseboards (usually 8 interconnected GPUs per node, like the NVIDIA HGX H100 systems). Server nodes are physically interconnected via dedicated high-bandwidth interconnects (e.g., NVLink within chassis, InfiniBand fabrics between racks). There is no software hypervisor between the operating system and the hardware; the enterprise has sole physical execution on the CPUs [1].
2. Hardware-Partitioned Virtualisation (Multi-Instance GPU - MIG): The MIG architecture (available for NVIDIA A100/H100 processors) partitions a single physical GPU into up to seven separate, physically isolated instances at the semiconductor level. Every instance has its own processing cores, memory cache and memory bandwidth. The underlying silicon may be shared by multiple corporate tenants, but the execution environments are segregated at the hardware level [16].
3. Hypervisor-Managed Virtual computers (VMs): Similar to regular cloud virtualisation, a software hypervisor isolates the underlying GPU hardware, scheduling computation cycles dynamically from a shared pool of real computers. The user is presented with a “instance shape” (e.g., AWS EC2 `p4d.24xlarge`) onto which workloads are dynamically scheduled onto interchangeable physical nodes within a zone of the data center [17].

3.2 Contract Types: Reserved, On-Demand, Take-or-Pay, and Hybrid Arrangements

Cloud companies offer different contractual models for computational power [1], [17]:

Dedicated cluster agreements: The customer leases specific, physically identifiable racks of servers in a specified data center for a set term (typically 1-3 years), and has exclusive, constant access. Reserved Capacity Agreements – The customer pays for a fixed amount of compute instances for a multi-year period (e.g. 1-3 years) at a discounted rate. The arrangement is taken or pays so you are on the hook for the capacity whether you use it or not. The supplier guarantees capacity availability, backed by SLAs.

Spot and On-Demand Contracts Customers pay for the actual amount of compute time used, on an hourly or secondly basis, with no upfront commitments. Hybrid Structural Contracts: A company signs a contract to a baseline minimum spend floor (take or pay) for a multi-year term to reserve fundamental model training capacity with the contractual right to burst into variable on-demand capacity during peak periods.

3.3 Physical Identification versus Virtual Allocation

Under IFRS 16.B13–B20, a key distinction is whether an asset is identified by physical specification or by virtual allocation [3]:

Physical Identification: Present when a contract specifies certain physical hardware (e.g. “Racks 10 through 18, Suite B, Data Center US-East”) or when the vendor needs to implicitly allocate particular physical superclusters to meet contractual interconnect bandwidth and latency criteria.

Virtual Allocation The contract sets performance specifications in terms of functionality (e.g., “100 TeraFLOPs of floating-point capacity”), and the vendor dynamically allocates the workload to replaceable processors around its worldwide infrastructure.

3.4 Supplier Substitution Rights and Operational Constraints

IFRS 16.B14: An asset is not identified when the supplier has significant substitute rights, But in the case of advanced AI GPU clusters, replacement rights are often constrained by substantial practical and economic factors [3]:

Operational switching costs: In particular, moving an active distributed deep-learning model (including model weights and gradients and optimiser states distributed across thousands of synchronised GPUs) to alternative physical hardware entails substantial operational downtime, latency disruptions, and risk of checkpoint corruption [1].

Capacity Constraints: Given worldwide semiconductor shortages and expensive capital costs, cloud operators often maintain high utilisation rates on modern GPU hardware (Hellman & Birch, 2026). Economically beneficial substitution of alternative idle clusters of the same technological architecture is rarely accessible in the same latency-bound network zone [1].

4. Critical Accounting Assessment under IFRS 16

4.1 Identified Assets and Capacity Portions (IFRS 16.B13–B20)

An identifiable asset is a piece of capacity of an asset if, in accordance with IFRS 16.B20:
It is physically distinct (such as a specific bare-metal server chassis, dedicated server rack, or discrete hardware partition); or it is not physically distinct, but the customer has the right to receive substantially all of the capacity of the asset and thus obtains the economic benefits of the underlying physical resource [3]. Contextual Evaluation: In the case of dedicated GPU cluster contracts, physical distinctness is created since certain hardware blades and interconnect switches are provisioned for the sole use of the customer. However, virtual instance shapes do not fulfil the established asset level for shared pools unless the user contracts for practically all capacity of a defined cluster [3], [16].

4.2 Substantive Substitution Rights (IFRS 16.B14)

Under IFRS 16.B14, a supplier’s right to substitute is substantive only if both of the following conditions are met [3]:

(1) The supplier has practical ability to substitute alternative assets during the period of use (alternative assets are readily available or accessible); and (2) The supplier would receive an economic benefit from the exercise of its right to substitute (economic benefits of substitution exceed the associated costs).

Evaluation in GPU Markets: The cloud contracts generally include standard clauses providing for substitution rights. IFRS 16.B14 demands an evaluation of economic content at beginning of the contract. Substitution rights are non-substantive, when worldwide GPU shortages, customised physical networking, and workload downtime penalties make substitution economically detrimental or physically impracticable for the vendor.

4.3 Control: Economic Benefits and Right to Direct Use (IFRS 16.B21–B30)

1. All Material Economic Benefits (IFRS 16.B21-B23) In a Dedicated or Reserved Capacity arrangement, the client has exclusive operational use of the computing output of the processors for the period of the contract, capturing the principal economic utility (training proprietary models or deploying applications). The supplier will not sell that capacity to anyone else [3].
2. Right of Use Directly (IFRS 16.B24–B30) The customer has the ability to manage the asset's usage by choosing which software frameworks to install, which machine learning algorithms to create, when to execute the training cycles, and how to divide the workloads between the nodes. The provider is responsible for physical maintenance, power and environmental cooling only [3].

4.4 Boundary Case: When Reserved Capacity Does Not Contain a Lease

It is important not to assume, as a matter of course, that all reserved capacity contracts are leases. Consider the following case [3]:

Set-up of contracts: An enterprise engages with a hyperscale provider for a 2-year reserved commitment of “100 GPU computed units”.

Technical Reality: Workloads execute in VM containers in the provider’s multi-tenant architecture. The company uses automatic dynamic load balancing to distribute jobs across arbitrary data centers in the region to optimise overall energy consumption. The network latency does not depend on the hardware InfiniBand fabric.

IFRS 16 Evaluation [3]:
The capacity component is not physically separate.
The customer does not obtain virtually all of the capacity of any one data center or cluster.
The provider has the technical ability and economic incentive to dynamically route workloads to minimise electrical power costs.
Conclusion: The boundary arrangement does not meet the identified asset conditions and must be accounted for as an executory service contract (OpEx) proving that contractual reservation alone does not create a lease.

4.5 Lease and Non-Lease Components (IFRS 16.12–17)

Figure 1 shows the separation of lease and non-lease components in cloud AI GPU capacity arrangements under IFRS 16.

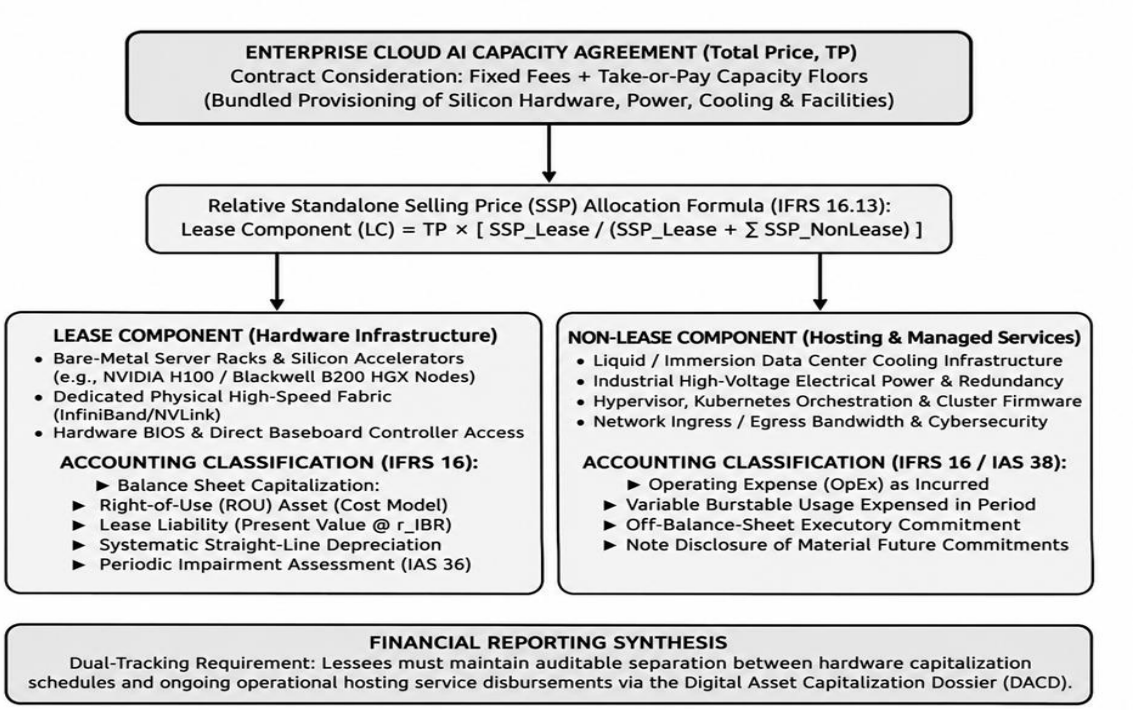


Figure 1: Structural Architecture and Component Unbundling of Cloud GPU Capacity Arrangements

Note. Diagram illustrates the separation of underlying physical hardware infrastructure from executory data center hosting, power, cooling, and orchestration services pursuant to IFRS 16.12–15. **Source:** Developed by the authors based on IFRS 16 and cloud SLA specifications.

In Cloud AI, contracts usually package physical hardware capacity and related services. Under IFRS 16.12–15, lessees are required to distribute the consideration for the contract between lease components and non-lease service components on a relative SSP basis [3]:

Lease elements: Right to use the physical GPU hardware, server racks and physical network fabrics.

Non-Lease Components: Power supply utilities, liquid cooling operations, security monitoring, cloud management software, outbound data egress services [1]. Practical Expedient (IFRS 16.15): Lessees may choose, per class of underlying asset, not to separate non-lease components and to account for the whole contract as a single lease component [3].

5. Development of the Proposed Recognition and Measurement Framework

5.1 Framework Overview

Figure 2 illustrates the sequential decision-making process for assessing cloud AI GPU capacity contracts under IFRS 16.

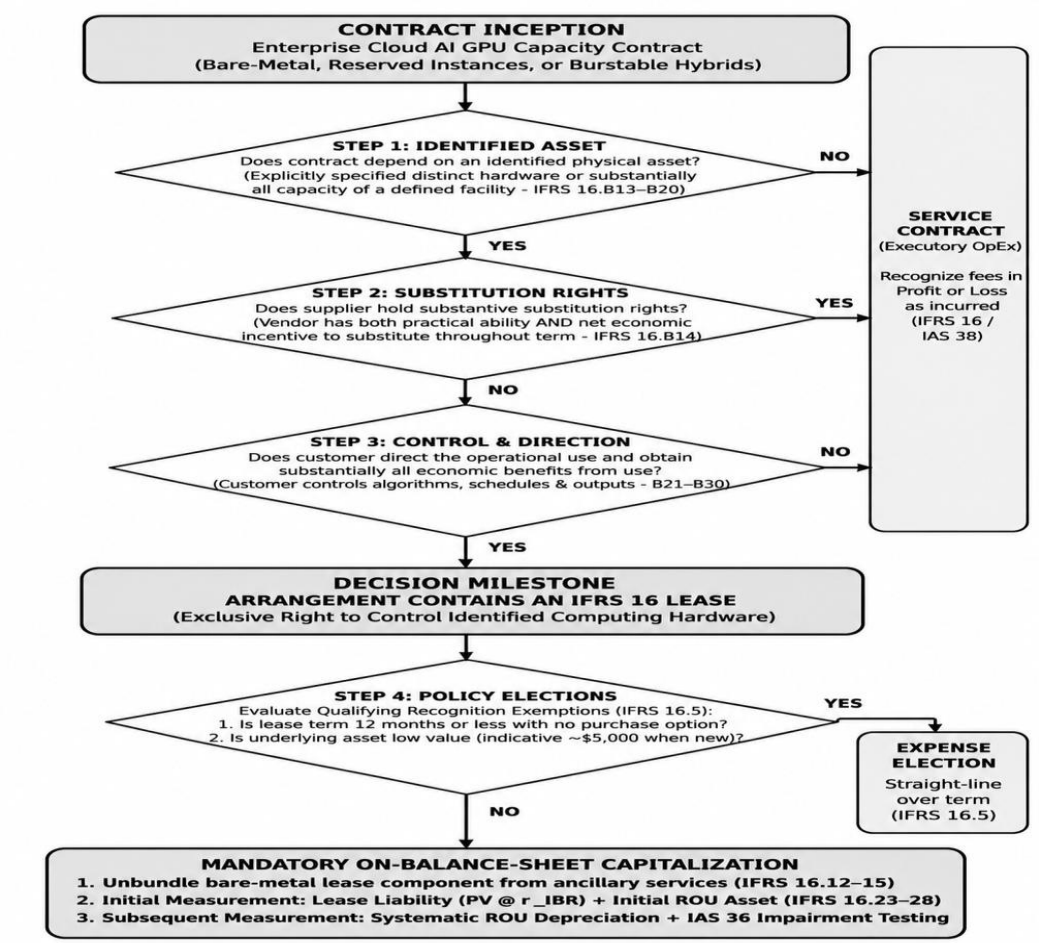


Figure 2: Sequential Decision-Tree Framework for Cloud AI GPU Capacity Contracts Under IFRS 16

Note. Flowchart operationalizes the sequential recognition criteria under IFRS 16.9–B33, distinguishing between identified physical hardware and shared computational pools.

Source: Developed by the authors based on IFRS 16 and IAS 36.

The developed framework converts the normative rules of IFRS 16, IAS 38 and IAS 36 into an operational and auditable approach for high-performance computing assets [8].

5.2 Integrated Framework Matrix

Table 1. operationalises the proposed framework by mapping contractual inputs and IFRS 16 criteria to accounting outputs and auditable documentation.

Table 1: Proposed Framework Matrix: Contractual Inputs, IFRS 16 Assessment, and Accounting Outputs

Stage	Contractual & Technical Input	IFRS 16 / IAS Evaluative Criteria	Accounting & Financial Reporting Output	Audit & Documentation Requirement (DACD)
1. Asset Identification	Hardware specification in SLA; network fabric configuration (InfiniBand vs. Ethernet); multi-tenant vs. bare-metal.	IFRS 16.B13–B20: Is asset physically distinct, or does customer command substantially all capacity of a specific cluster?	If distinct → Identified Asset. If shared/virtual pool without capacity exclusivity → Service Contract.	Technical SLA architecture diagram; data center pod identification; CTO sign-off.

2. Substitution Evaluation	Supplier substitution clauses; availability of equivalent clusters; switching latency and downtime costs.	IFRS 16.B14: Does vendor have both practical ability and net economic incentive to substitute?	If substitution is economically irrational or practically constrained → Rights are non-substantive.	Market chip availability assessment; workload downtime analysis; vendor operational review.
3. Control & Direction	Access permissions (root/bare metal); scheduling authority; workload and algorithm choice.	IFRS 16.B21–B30: Does customer direct operational use and obtain substantially all economic output?	If customer controls operational parameters → Control established → Lease exists.	Workload orchestration logs; operating rights verification.
4. Term & Exemptions	Contract length; renewal options; termination rights; asset replacement cost.	IFRS 16.5 & 16.18–21: Non-cancellable term + reasonably certain extensions. Check short-term (≤ 12 mos) and low value (≤ 5k).	GPU clusters exceed 5,000; if term > 12 months → Exemptions fail → Must capitalize.	Analysis of extension economics; hardware market valuation benchmarks.
5. Component Unbundling	Bundled fee schedule covering hardware, power, cooling, software licenses, network egress.	IFRS 16.12–15: Allocate consideration based on relative Standalone Selling Prices (SSP).	Separate Lease Component (LC) from Non-Lease Service Components (NLC).	Third-party bare-metal pricing quotes; vendor price breakdown analysis.
6. Initial Measurement	Fixed payment schedule; minimum take-or-pay floor; advance deposits; direct setup costs.	IFRS 16.23–28: Discount fixed payments at r_{IBR} to measure LL_0; capitalize ROU_0 = LL_0 + Advance + Direct Costs.	Recognize ROU Asset and Lease Liability on Balance Sheet at commencement.	IBR yield curve derivation documentation; interest rate benchmarking file.
7. Subsequent Measurement	Payment processing; semiconductor architecture release cycles; computational market rates.	IFRS 16.29–38 & IAS 36: Amortize LL at effective rate; depreciate ROU over shorter of term or useful life; test for impairment.	Depreciate ROU asset; record lease interest expense; recognize impairment if technology becomes obsolete.	Annual technological obsolescence review; recoverable amount (FVLCD / VIU) valuation model.

Note. Matrix operationalises contract conditions, technical specifications, IFRS 16 evaluation criteria and audit documentation requirements (DACD).
Source: Author's elaboration based on IFRS 16, IAS 36, and IAS 38.

5.3 Initial Measurement Mechanics

1. Development of the Incremental Borrowing Rate (r_IBR)

IFRS 16.26 requires lease payments to be discounted at the rate inherent in the lease, or the lessee's incremental borrowing rate if the implicit rate is not clearly determinable For specialised electronic assets, r_IBR should reflect term, currency, corporate credit risk and asset collateral [3], [7]:

$$r_{IBR} = r_{reference}(T) + CS_{entity} + \Delta_{asset}(GPU)$$

Where r_{reference}(T) is the risk-free rate for term T, CS_{entity} is the credit spread reflecting firm default risk, and Δ_{asset}(GPU) is a collateral adjustment reflecting the specialized nature and rapid economic depreciation of GPU hardware [7].

2. Component Separation Formulation

Under IFRS 16.13, contract consideration (TP) is allocated to lease and non-lease components based on relative standalone selling prices [3]:

$$LC = TP \times \left(\frac{SSP_{Lease}}{SSP_{Lease} + \sum S\,SP_{NonLease}}\right)$$

$$NLC = TP - LC$$

5.4 Subsequent Measurement and IAS 36 Impairment Considerations

Lease Liability Amortisation: Measured at amortised cost using the effective interest method:

$$LL_t = LL_{t-1} \times (1 + r_{IBR}) - LP_t$$

Rou Asset Depreciation: Straight line over lease term (T) or shorter useful life (UL)

$$Depreciation_t = \frac{ROU_0}{T}$$

IAS 36 Impairment Mechanics IAS 36.12 suggests an impairment trigger when revolutionary semiconductor microarchitectures make the contractual GPU cluster economically obsolete. The entity needs to determine the Recoverable Amount (RA) which can be done either on an individual asset basis (if the cluster generates stand-alone cash inflows from commercial API invoicing) or on a Cash Generating Unit (CGU) basis [8].

$$Impairment\ Loss = \max(0, Carrying\ Amount(ROU_t) - RA))$$

6. Scenario Assumptions and Baseline Financial Position

For instance, in the sample model, a company called Enterprise AI Solutions Ltd. has signed a three-year cloud infrastructure contract, starting on January 1, 2026.The financial position of the Baseline as of December 31, 2025 is as follows:

Cash and Cash Equivalents: 15,000,000

Other PP&E / Non-Current Assets: 35,000,000

Total Assets: 50,000,000

Current Liabilities (Trade Payables): 10,000,000

Non-Current Financial Debt: 15,000,000

Total Liabilities: 25,000,000

Shareholders' Equity (Capital & Retained Earnings): 25,000,000

Total Liabilities & Equity: 50,000,000

Annual Operating Revenues (in cash) Base year 40,000,000

Annual Operating Expenses (excluding GPU Contract): 28,000,000 (cash paid)

Income tax rate: 25% (taxes to be paid in cash at year-end, no dividend distributions)

Incremental Borrowing Rate (r_IBR) : 6.0 % p.a.

To make three scenarios completely comparable for analysis, the total amount paid to the cloud vendor in Year 1 is set at exactly 5,000,000.

6.1 Scenario Descriptions

Scenario A (Dedicated GPU Cluster - Full capitalisation of lease): The company leases actual server racks devoted to NVIDIA H100 GPUs. Total consideration is 15,000,000 (5,000,000 to be paid in advance yearly on January 1, 2026, January 1, 2027, and January 1, 2028). This agreement complies with all of the IFRS 16 lease rules. The firm has applied the practical expedient (IFRS 16.15) not to separate non-lease services [3].

Scenario B (Shared Substitutable Capacity – Service Contract / OpEx): The organization rents dynamic virtual instances from a shared pool in the cloud. The vendor has the right of practical and economic substitution. The lease does not qualify as an IFRS 16 lease and is treated as an executory service contract (operating expense of $5,000,000 per annum) [3].

Scenario C (Hybrid Contract with Component Separation & Burstable Fees): The enterprise signs a contract for a dedicated bare-metal base cluster with a fixed commitment of 3,500,000 per year payable upfront, with variable fees of 1,500,000 incurred and paid during Year 1 (Total cash paid in Year 1 = 5,000,000). The standalone selling price study shows that 70% of the fixed charge is associated with hardware infrastructure (LC = 2,450,000/yr) and 30% is associated with managed services (NLC = 1,050,000/yr) [3].

6.2 Mathematical Measurement Schedules

Scenario A Calculations:
Initial Advance Payment (Jan 1, 2026): 5,000,000.00.
Initial Lease Liability (LL_0) reflects present value of Year 2 and Year 3 advance payments:
LL_0 = (5,000,000 / (1.06) ^1) + (5,000,000 / (1.06)^2) = 4,716,981.13 + 4,449,982.20 = 9,166,963.33
Initial ROU Asset (ROU_0):
ROU_0 = LL_0 + Advance_0 = 9,166,963.33 + 5,000,000.00 = 14,166,963.33
Year 1 Straight-Line Depreciation: 14,166,963.33 / 3 = 4,722,321.11.
Net ROU Asset Carrying Amount (Dec 31, 2026): 14,166,963.33 - 4,722,321.11 = 9,444,642.22.
Year 1 Lease Interest Expense (6% effective rate on LL_0): 9,166,963.33 × 0.06 = 550,017.80.
Ending Total Lease Obligation Carrying Amount (Dec 31, 2026): 9,166,963.33 + 550,017.80 = 9,716,981.13.
Current Lease Obligation (Contractual Outflow Due Jan 1, 2027: 5,000,000.00):
Accrued Lease Interest Payable: 550,017.80 (accrued finance cost up to reporting date).
Current Portion of Lease Principal: 4,449,982.20 (5,000,000.00 - 550,017.80).
Non-Current Lease Liability: 9,716,981.13 - 5,000,000.00 = 4,716,981.13 (reflecting the discounted present value of the final Year 3 payment).

Scenario C Calculations:

Fixed Lease Component (70%): 3,500,000.00 × 0.70 = 2,450,000.00 annually.
Initial Lease Liability (LL_0): Present value of Years 2 and 3 lease components:
LL_0 = (2,450,000 / (1.06) ^1) + (2,450,000 / (1.06)^2) = 2,311,320.75 + 2,180,491.28 = 4,491,812.03

Initial ROU Asset (ROU_0): 4,491,812.03 + 2,450,000.00 (Advance) = 6,941,812.03.
Year 1 Straight-Line Depreciation: 6,941,812.03 / 3 = 2,313,937.34.
Net ROU Asset Carrying Amount (Dec 31, 2026): 6,941,812.03 - 2,313,937.34 = 4,627,874.69.
Year 1 Lease Interest (6% effective rate on LL_0): 4,491,812.03 × 0.06 = 269,508.72.
Ending Total Lease Obligation Carrying Amount (Dec 31, 2026): 4,491,812.03 + 269,508.72 = 4,761,320.75.
Current Lease Obligation (Contractual Outflow Due Jan 1, 2027: 2,450,000.00):
Accrued Lease Interest Payable: 269,508.72.
Current Portion of Lease Principal: 2,180,491.28 (2,450,000.00 - 269,508.72).
Non-Current Lease Liability: 4,761,320.75 - 2,450,000.00 = 2,311,320.75.
Year 1 Operating Expenses: Fixed Non-Lease Service Component (1,050,000.00) + Variable Usage Burst Fee (1,500,000.00) = 2,550,000.00.

6.3 Journal Entries (Scenario A — Year 1)

All operational revenues, baseline operating costs, lease cash payments and tax disbursements are strictly cash settled to provide transparent, 1-to-1 alignment with the statement of cash flows:

1. January 1, 2026 (Lease Commencement and Advance Payment):

The journal entries for the initial recognition of the lease liability, advance payment, and right-of-use asset under Scenario A are shown in Table 2.

Table 2: Journal Entries for Scenario A (General Journal Schedule)

Account Titles and Explanation	Debit ()	Credit ()
Right-of-Use Asset (GPU Infrastructure)	14,166,963.33	
; Cash and Cash Equivalents		5,000,000.00
; Lease Liability (Non-Current Principal)		9,166,963.33
(To record initial ROU asset, advance cash payment, and present value of remaining lease liability)		

Note. All operational revenues, baseline expenses, lease payments, and corporate taxes are settled strictly in cash.
Source: Author's calculation.

2. Throughout 2026 (Operational Activities):

The journal entries for operating income and expenses for 2026 under Scenario A are shown in Table 3.

Table 3: Journal Entries for Scenario A – Operational Activities (2026)

Account Titles and Explanation	Debit ()	Credit ()
Cash and Cash Equivalents	40,000,000.00	
Revenue		40,000,000.00
(To record annual operating revenues collected in cash)		
Operating Expenses (General & Administrative)	28,000,000.00	
Cash and Cash Equivalents		28,000,000.00
(To record baseline corporate operating expenses paid in cash)		

Note. All operational revenues, baseline expenses, lease payments, and corporate taxes are settled strictly in cash.
Source: Author's calculation.

3. December 31, 2026 (Depreciation, Finance Costs, Taxes, and Current Liability Reclassification):

The year-end journal entries for income taxes, depreciation, financing expenses, and lease liability reclassification under Scenario A are shown in Table 4.

Table 4: Year-End Adjusting Journal Entries for Scenario A (2026)

Account Titles and Explanation	Debit ()	Credit ()
Depreciation Expense (ROU Asset)	4,722,321.11	
Accumulated Depreciation — ROU Asset		4,722,321.11
(To record straight-line depreciation of GPU ROU asset for Year 1)		
Finance Costs (Lease Interest Expense)	550,017.80	
Accrued Lease Interest Payable (Current)		550,017.80
(To accrue interest on lease liability at 6% effective rate up to reporting date)		
Income Tax Expense	1,681,915.27	
Cash and Cash Equivalents		1,681,915.27
(To record annual corporate income taxes paid in cash at 25% tax rate)		
Lease Liability (Non-Current Principal)	4,449,982.20	
Lease Liability (Current Principal Portion)		4,449,982.20
(To reclassify principal portion of lease liability due within 12 months on Jan 1, 2027)		

Note. All operational revenues, baseline expenses, lease payments, and corporate taxes are settled strictly in cash.

Source: Author's calculation.

6.4 Fully Reconciled Financial Statements and Ratio Analysis

The fully balanced financial statements and ratio comparisons for all scenarios as of December 31, 2026, are presented in Table 5. In IAS 7, the Statement of Cash Flows strictly divides cash flows from operational activities (CFO) and financing activities (CFF), reflecting the structural cash flow reclassification generated by IFRS 16:

Table 5: Comparative Financial Statement Impact Across Scenarios at End of Year 1 (Dec 31, 2026)

Financial Statement Metric	Baseline (pre-contract)	Scenario A (Full Lease)	Scenario B (Service OpEx)	Scenario C (Hybrid Unbundled)
Statement of Profit or Loss:				
Revenue	40,000,000.00	40,000,000.00	40,000,000.00	40,000,000.00
Baseline Operating Expenses	(28,000,000.00)	(28,000,000.00)	(28,000,000.00)	(28,000,000.00)
GPU Contract Service Expense	0.00	0.00	(5,000,000.00)	(2,550,000.00)
EBITDA	12,000,000.00	12,000,000.00	7,000,000.00	9,450,000.00
Depreciation of ROU Asset	0.00	(4,722,321.11)	0.00	(2,313,937.34)
Operating Profit (EBIT)	12,000,000.00	7,277,678.89	7,000,000.00	7,136,062.66
Lease Interest Expense	0.00	(550,017.80)	0.00	(269,508.72)
Profit Before Tax (EBT)	12,000,000.00	6,727,661.09	7,000,000.00	6,866,553.94
Income Tax Expense (25%)	(3,000,000.00)	(1,681,915.27)	(1,750,000.00)	(1,716,638.49)
Net Profit for the Year	**9,000,000.00**	**5,045,745.82**	**5,250,000.00**	**5,149,915.45**
Statement of Cash Flows (IAS 7 Activity Breakdown):				
Cash Flows from Operating Activities (CFO):				

Cash Receipts from Customers (Revenue)	40,000,000.00	40,000,000.00	40,000,000.00	40,000,000.00
Cash Paid for Baseline Operating Costs	(28,000,000.00)	(28,000,000.00)	(28,000,000.00)	(28,000,000.00)
Cash Paid for GPU Service Agreements	0.00	0.00	(5,000,000.00)	(2,550,000.00)
Cash Paid for Income Taxes	(3,000,000.00)	(1,681,915.27)	(1,750,000.00)	(1,716,638.49)
Net Cash from Operating Activities (CFO)	**9,000,000.00**	**10,318,084.73**	**5,250,000.00**	**7,733,361.51**
Cash Flows from Financing Activities (CFF):				
;Lease Advance / Principal Payment	0.00	(5,000,000.00)	0.00	(2,450,000.00)
Net Cash from Financing Activities (CFF)	**0.00**	**(5,000,000.00)**	**0.00**	**(2,450,000.00)**
Net Increase in Cash and Cash Equivalents	**9,000,000.00**	**5,318,084.73**	**5,250,000.00**	**5,283,361.51**
Opening Cash Balance (Jan 1, 2026)	15,000,000.00	15,000,000.00	15,000,000.00	15,000,000.00
Ending Cash Balance (Dec 31, 2026)	24,000,000.00	20,318,084.73	20,250,000.00	20,283,361.51
Statement of Financial Position:				
Cash and Cash Equivalents	24,000,000.00	20,318,084.73	20,250,000.00	20,283,361.51
Right-of-Use Asset (Net Carrying Amount)	0.00	9,444,642.22	0.00	4,627,874.69
Other PP&E / Non-Current Assets	35,000,000.00	35,000,000.00	35,000,000.00	35,000,000.00
Total Assets	**59,000,000.00**	**64,762,726.95**	**55,250,000.00**	**59,911,236.20**
Current Liabilities (Trade Payables)	10,000,000.00	10,000,000.00	10,000,000.00	10,000,000.00
Accrued Lease Interest Payable (Due Jan 1, 2027)	0.00	550,017.80	0.00	269,508.72
Current Lease Liability (Principal Due Jan 1, 2027)	0.00	4,449,982.20	0.00	2,180,491.28
Total Current Liabilities	**10,000,000.00**	**15,000,000.00**	**10,000,000.00**	**12,450,000.00**
Non-Current Financial Debt	15,000,000.00	15,000,000.00	15,000,000.00	15,000,000.00
Non-Current Lease Liability (Due Jan 1, 2028)	0.00	4,716,981.13	0.00	2,311,320.75
Total Liabilities	**25,000,000.00**	**34,716,981.13**	**25,000,000.00**	**29,761,320.75**
Opening Shareholders' Equity	25,000,000.00	25,000,000.00	25,000,000.00	25,000,000.00
Retained Earnings (Current Year Net Profit)	9,000,000.00	5,045,745.82	5,250,000.00	5,149,915.45
Total Shareholders' Equity	**34,000,000.00**	**30,045,745.82**	**30,250,000.00**	**30,149,915.45**
Total Liabilities and Equity	**59,000,000.00**	**64,762,726.95**	**55,250,000.00**	**59,911,236.20**
Balance Sheet Check (Assets - Liabilities - Equity)	0.00	0.00	0.00	0.00
Financial Ratios & Performance Metrics:				
EBITDA Margin	30.00%	30.00%	17.50%	23.63%
Debt-to-Equity (D/E Ratio)	0.74x	1.16x	0.83x	0.99x
Total Liabilities-to-Assets (D/A)	**42.37%**	**53.61%**	**45.25%**	**49.68%**
Current Ratio (CR)	2.40x	1.35x	2.03x	1.63x
Return on Assets (ROA)	15.25%	7.79%	9.50%	8.60%

Note: Enterprise AI Solutions Ltd. Comparative Financial Statement Effect. In all three cases the annual cash outflow for GPUs is same at $5,000,000. The cash flows are presented in accordance with IAS 7 classification of activities.

Source: Author's numerical simulation model based on IFRS 16 and IAS 7.

6.5 Analysis of Results

The comparative financial performance, leverage, and liquidity parameters for the three accounting scenarios are shown in Figure 3.

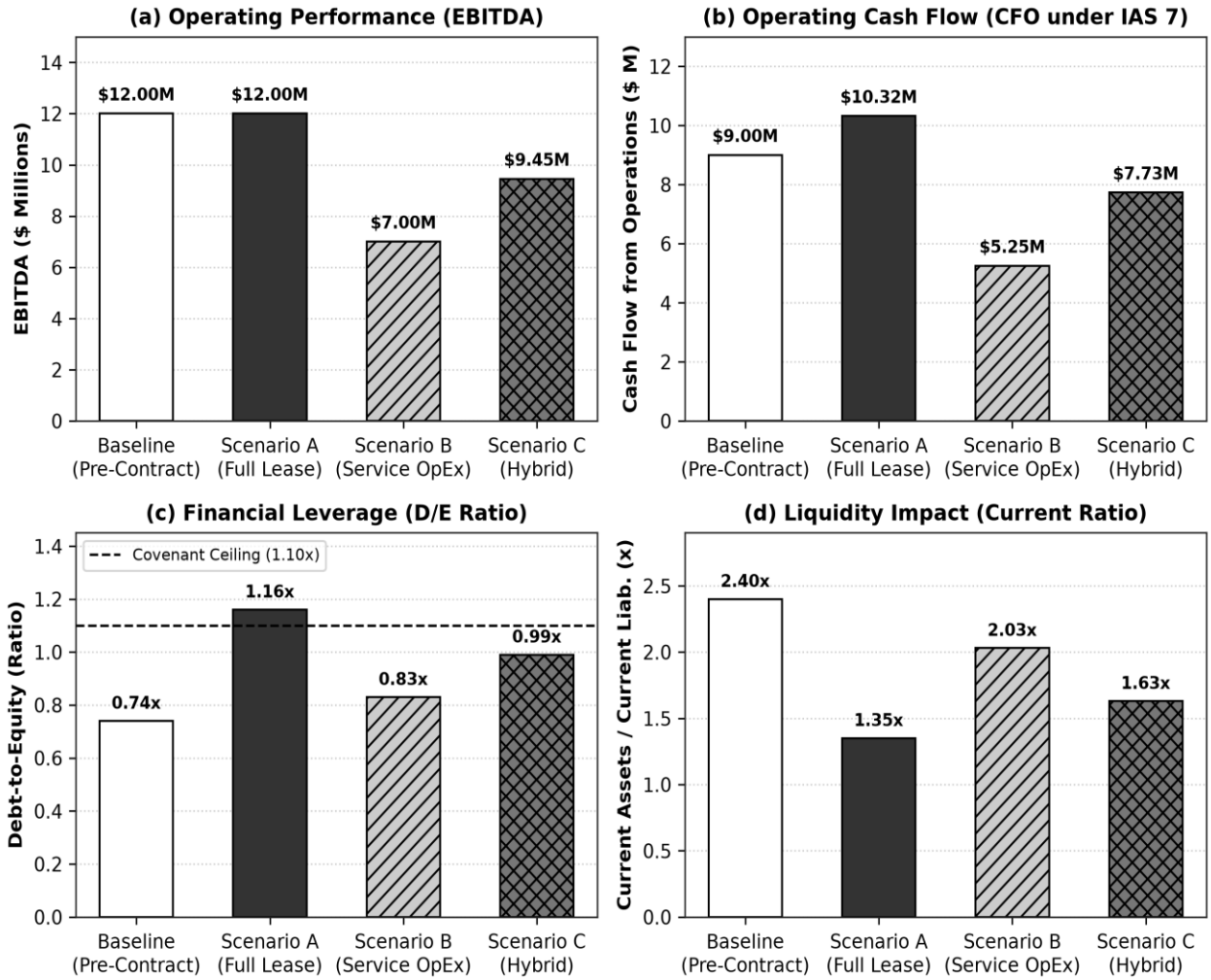


Figure 3: Comparative Financial and Leverage Metrics across Accounting Scenarios

Note. Data reflects Year 1 financial statement impacts for Enterprise AI Solutions Ltd across EBITDA, Operating Cash Flow, Debt-to-Equity, and Current Ratio. The horizontal dashed line represents a hypothetical loan covenant leverage ceiling of 1.10 xs.

Source: Authors' simulation based on IFRS 16 and IAS 7.

1. Financial Leverage & Debt Covenant Exposure In Scenario A, total liabilities increase by 9,716,981.13 (+38.9%) boosting the D/E ratio from 0.83x to 1.16x. The Debt Covenant Hypothesis of Positive Accounting Theory supports the technical breach of covenant from lease capitalisation, if the loan covenants set a maximum leverage ceiling of 1.10x [4,218].
2. EBITDA & Cash Flow Reclassification: Reported EBITDA is 71.4% greater in Scenario A than in Scenario B (12.0M vs. 7.0M). Importantly, the Operating Cash Flow (CFO) improves by 96.5% (10,318,084.73 vs. 5,250,000.00) as the 5,000,000.00 GPU cash payment is reclassified from operating outflows to financing outflows (CFF) in accordance with IAS 7 [5], [11].
3. Liquidity contraction: The Current Ratio contracts from 2.03 xs in Scenario B to 1.35 xs in Scenario A due to the 5,000,000.00 current obligations due on January 1, 2027 (with 550,017.80

accrued interests and 4,449,982.20 current principal) reflecting immediate short-term liquidity claims [6], [13].

4. Financial Statement Disclosure and Contractual Commitments: Under Scenario B, the dynamic compute agreement is not an identified asset and is rightly treated as an executory service agreement under IFRS 16 and therefore the non-recognition of a lease liability is not an accounting omission but is technically compliant with the requirements of the standard. However, from an analytical and governance perspective the firm is legally obligated to $10,000,000.00 in non-cancellable future cash payments in Year 2 and Year 3. Rigorous note disclosure of these material executory obligations is important under IAS 1.112 (disclosure of key accounting judgements) and related standards governing major commitments [3] to ensure transparency to creditors and equity investors.

6.6 Sensitivity and Impairment Analysis

1. Sensitivity to Incremental Borrowing Rate (r_IBR):

Table 6: Sensitivity of initial lease liability, right-of-use asset and Year 1 profit before tax to change in incremental borrowing rate (r_IBR) from 4% to 8% around the baseline of 6%

Table 6: Sensitivity of Lease Liability, ROU Asset, and Profit Before Tax to Incremental Borrowing Rate (IBR)

Assumed r_IBR}	Initial Lease Liability (LL_0)	Initial ROU Asset (ROU_0)	Year 1 Depreciation	Year 1 Interest	Year 1 Total Expense	Net PBT Impact
4.0%	9,430,473	14,430,473	4,810,158	377,219	5,187,377	(5,187,377)
5.0%	9,297,052	14,297,052	4,765,684	464,853	5,230,537	(5,230,537)
6.0% (Base)	9,166,963	14,166,963	4,722,321	550,018	5,272,339	(5,272,339)
7.0%	9,040,091	14,040,091	4,680,030	632,806	5,312,836	(5,312,836)
8.0%	8,916,324	13,916,324	4,638,775	713,306	5,352,081	(5,352,081)

Note. Sensitivity bounds consider ±200 basis point movement around baseline discount rate of 6.0%. Higher rates reduce initial capitalisation of the balance sheet and increase interest expense in Year 1.

Source: Author's calculation.

Observation: Higher discount rates decrease initial balance sheet capitalization while increasing financing costs over the term, demonstrating the importance of auditable IBR derivation [7].

2. IAS 36 Impairment Shock Simulation (Technological Obsolescence):

To illustrate the application of IAS 36 (Impairment of Assets) within the proposed framework, assume that on December 31, 2026, next-generation semiconductor microarchitecture (e.g., dense next-gen accelerators) is commercially deployed, causing spot market rental rates for prior-generation H100 GPU capacity to decline by 50% [8]. Pre-Impairment Carrying Amount: 9,444,642.22 (ROU asset carrying value after Year 1 straight-line depreciation).

Determination of Recoverable Amount (RA = max (FVLCD, VIU)):

1. Fair Value less Costs of Disposal (FVLCD): Estimated sublease rental rate in the secondary computing market for the remaining 2 years is 2,300,000.00 per annum. Discounted at the market secondary rate of 7.0%, the gross market value is:

PV = (2,300,000 / (1.07) ^1) + (2,300,000 / (1.07) ^2) = 2,149,532.71 + 2,008,909.07 = 4,158,441.78

Deducting estimated broker and transfer costs of disposal (2% = 83,168.84), net FVLCD = 4,075,272.94.

2. Value in Use (VIU): The enterprise's updated internal multi-period cash flow forecast reflects incremental net operating cash inflows generated by deploying the dedicated cluster for proprietary enterprise AI workloads: 2,500,000.00 in Year 2 (2027) and 2,400,000.00 in Year 3 (2028). Discounting these projected operational cash flows at the entity's pre-tax WACC / asset discount rate of 6.0%:

VIU = (2,500,000 / (1.06) ^1) + (2,400,000 / (1.06) ^2) = 2,358,490.57 + 2,135,991.46 = 4,494,482.03 ≈ 4,500,000.00

3. Recoverable Amount Selection:

RA = max (FVLCD, VIU) = max (4,075,272.94, 4,500,000.00) = 4,500,000.00
Impairment Charge Calculation:

Impairment Loss = Carrying Amount - RA = 9,444,642.22 - 4,500,000.00 = 4,944,642.22

Accounting Treatment The impairment loss of 4,944,642.22 is recognised immediately in profit or loss as operating impairment charge for 2026 under IAS 36.59. The amended carrying amount of 4,500,000.00 is depreciated prospectively over the remaining 2 year lease period at 2,250,000.00 per annum. This numerical example confirms the suggested framework to provide standard-compliant mechanics for absorbing rapid digital hardware obsolescence within IFRS reporting limitations [8].

7. Discussion

7.1 Interpretation of Findings

The signing of a multiyear arrangement for a dedicated or reserved cluster results in exclusive operational control of the productive capital equipment by a firm, Treating these contracts as off-balance-sheet operational expenses understates commitments, flattens apparent leverage, and reduces financial comparability between firms that choose to buy rather than lease hardware [11], [12], [19].

7.2 Theoretical Implications

Positive Accounting Theory: In line with Watts and Zimmerman (1986) and Azizan et al. (2026), the framework highlights how lease capitalization constrains managerial discretion to utilize uncapitalized computing contracts to avoid covenant constraints [4], [18]. Information Asymmetry and Decision Usefulness: In accordance with Information Asymmetry Theory and empirical value-relevance research, bringing material computing obligations onto the balance sheet provides investors with a more faithful representation of enterprise capital commitments [20], [21].

7.3 Practical and Audit Considerations

The technique shows that the accounting for cloud computing arrangements under IFRS 16 requires interdisciplinary cooperation between financial accountants and IT infrastructure teams. Auditors should examine beyond standard contractual provisions to practicalities of hardware dedication, connectivity fabrics and substitute economics [14], [15], [22].

7.4 Limitations

The proposed framework has three main limitations: (1) the subjective estimation in finding r_{IBR} in less-liquid debt markets [7]; (2) the practical challenges in getting observable standalone selling price (SSP) for proprietary bundled cloud services; and (3) the complexity in doing regular impairment tests in the midst of fast technological change [8].

8. Conclusions and Recommendations

8.1 Conclusions

As generative AI expands, corporate commitments for multi-million-dollar GPU computing are a fast-rising class of deals. Significant lease liabilities may not be recognised if qualifying lease agreements are classified as executory service contracts, especially if this categorisation is based only on broad assumptions regarding cloud virtualisation. When (1) an identified asset is present, (2) the supplier does not have a substantive substitution right, and (3) the customer has the right to obtain nearly all of the economic benefits from using the identified asset and to direct its use throughout the period of use, structured GPU infrastructure arrangements fall under the definition of a lease under IFRS 16. Classification is an empirical question of technical architecture, not of contract terminology. The proposed Recognition and Measurement Framework is a standardised, auditable system for the classification, unbundling, measurement and amortisation of such contracts.

8.2 Recommendations for Practice and Standard-Setting

1. For Financial Preparers and Auditors: Formalise a cloud Service Level Agreement review across functions to establish capacity promises, take-or-pay provisions and substitute realities. Create a Digital Asset Capitalisation Dossier (DACD) including standalone selling prices and IBR calculations.
2. For the IASB and IFRS Interpretation Committee: Provide formal interpretive guidance on the application of IFRS 16 to virtualised and high-density digital infrastructure, including clear principles for assessing physical distinctness of computing assets and substitution economics in supply-constrained technology sectors.
3. Future Research: Examine business AI computing commitment declarations empirically and look into credit rating agency modifications in a variety of technology-intensive industries.

References

[1] Hellman, J., & Birch, K. (2026). Cloud assets and the "unit of computing": Market dominance in commercial computing. Big Data & Society, 13(3), 1–14. https://doi.org/10.1177/20539517261464567

[2] Afrizal, & Rosmaria. (2026). The Accounting of Artificial Intelligence Assets: Challenges of Recognition and Measurement of AI as Corporate Assets. Archipel: Journal of Indonesian Interdisciplinary Studies, 1(10), 47–57. https://doi.org/10.65739/archipel.v1i10.67

[3] International Accounting Standards Board (IASB). (2016). IFRS 16 Leases. IFRS Foundation, London.

[4] Azizan, S. S., Marzuki, M., Mohd Jamil, M., Ilias, N. F., & Safeei, R. (2026). How IFRS 16 Capitalisation Affects Firm Performance through Financial Leverage. International Journal of Research and Innovation in Social Science (IJRISS), 10(8), 12403–12412. https://doi.org/10.47772/IJRISS.2026.100800842

[5] Białek-Jaworska, A., Dobroszek, J., & Szatkowska, P. (2022). Does the IFRS 16 affect the key ratios of listed companies? Evidence from Poland. International Journal of Management and Economics, 58(3), 299–315. https://doi.org/10.2478/ijme-2022-0016

[6] Górowski, I., Kurek, B., & Szarucki, M. (2022). The Impact of a New Accounting Standard on Assets, Liabilities and Leverage of Companies: Evidence from Energy Industry. Energies, 15(4), 1293. https://doi.org/10.3390/en15041293
[7] Delgado-Vaquero, D., Morales-Díaz, J., & Zamora-Ramírez, C. (2022). IFRS 16 incremental borrowing rate: Comparability issues and a methodology proposal for loss given default adjustment. Accounting in Europe, 19(2), 263–288.
[8] International Accounting Standards Board. (n.d.-a). IAS 36 Impairment of Assets. IFRS Foundation.
[9] Intho, S., & Uachanachit, D. (2026). Exploring AI-Enabled Cloud Transformation Towards Digitalization Value in Accounting Firms. Emerging Science Journal, 10(3), 1744–1757. https://doi.org/10.28991/ESJ-2026-010-03-030
[10] Imhoff, E. A., & Thomas, J. K. (1988). Economic consequences of accounting standards: The lease disclosure rule change. Journal of Accounting and Economics, 10(4), 277–310.
[11] [11] Segal, M., & Naik, G. (2019). The expected impact of the implementation of International Financial Reporting Standard (IFRS) 16 – Leases. Journal of Economic and Financial Sciences, 12(1), a207, 1–12. https://doi.org/10.4102/jef.v12i1.207
[12] Muhammad, F. J., & Jabir, A. Y. (2020). The Economic Substance of the Accounting Practice under Reporting Standard No. 16 (IFRS 16) of Leasing. Al-Muthanna Journal of Administrative and Economic Sciences, 10(3), 202–212. https://doi.org/10.52113/6/2020-10-3/202-212
[13] Zotova, K. O., & Karelskaia, S. N. (2021). The Effect of the New Lease Accounting Rules under IFRS 16 on the Financial Reporting of Russian Companies. Ekonomika. Pravo. Innovacii, (3), 4–11. http://dx.doi.org/10.17586/2713-1874-2021-3-4-11.
[14] Leitner-Hanetseder, S., & Lehner, O. M. (2023). AI-powered information and Big Data: current regulations and ways forward in IFRS reporting. Journal of Applied Accounting Research, 24(2), 282–298. https://doi.org/10.1108/JAAR-01-2022-0022
[15] Choi, B. (2021). Enhanced Audit Techniques Empowered by the Reinforcement Learning Pertaining to IFRS 16 Lease. arXiv preprint, arXiv:2101.05633 [cs.LG], 1–8.
[16] NVIDIA. Multi-Instance GPU (MIG) User Guide. NVIDIA Documentation. https://docs.nvidia.com/datacenter/tesla/mig-user-guide/latest/introduction.html.
[17] Amazon Web Services (AWS). Amazon EC2 P4 Instances. Amazon Web Services. https://aws.amazon.com/ec2/instance-types/p4/
[18] Watts, R. L., & Zimmerman, J. L. (1986). Positive Accounting Theory. Prentice-Hall, Englewood Cliffs, NJ.
[19] Mihalciuc, C. C. (2019). Accounting and Recognizing Leasing Contracts in Financial Reports. European Journal of Accounting, Finance & Business, 9(19), 1–8.
[20] Elmaguiri, D., Elouanbi, S., & El ajimi, A. (2021). La « value relevance » de la norme IFRS 16 dans le contexte marocain / The value relevance of IFRS 16 in the Moroccan context. International Journal of Accounting, Finance, Auditing, Management and Economics (IJAFAME), 2(6), 1–22. https://doi.org/10.5281/zenodo.5524907
[21] Musa-Mubi, A., & Nasiru, Y. (2024). IFRS-16 and Information Quality of Listed Non-Financial Firms in Nigeria. Jurnal Riset Akuntansi dan Keuangan Indonesia, 9(1), 97–108.
[22] Moll, J., & Yigitbasioglu, O. (2019). The role of internet-related technologies in shaping the work of accountants: New directions for accounting research. British Accounting Review, 51(6), Article 100833, 1–20. https://doi.org/10.1016/j.bar.2019.04.002