

SOURCE-BASED RECOGNITION AND MEASUREMENT OF INFRASTRUCTURE ASSETS IN ELECTRICITY NETWORK COMPANIES

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Abstract

This study develops a source-based methodology for the recognition and measurement of infrastructure assets in electricity network companies. A three-criterion decision framework is used to identify eight financing-source codes, each linked to a specific recognition model, measurement basis and treatment within the regulated asset base (RAB). Application of the methodology to Regional Electric Power Networks JSC demonstrates that reclassification of qualifying state support may transform reported negative equity of UZS 387.9 billion into positive equity of approximately UZS 2.9-6.1 trillion, depending on the scenario. The proposed framework connects IFRS recognition requirements with tariff regulation and improves the traceability of state-funded, concessional and customer-financed network assets.

Keywords: Infrastructure assets; financing source; government grants; capital contribution; deferred income; regulated asset base; IFRS; electricity networks.

Electricity-network investment is financed through several channels: state contributions to share capital and assets transferred through state ownership arrangements [1], budget subsidies, concessional loans from international financial institutions [2], and connection assets constructed by customers. Conventional accounting primarily records what an asset is, rather than where its financing originated. Regional Electric Power Networks JSC (REPN JSC) recognised all forms of government assistance - subsidies, equipment and the benefit arising from concessional borrowing (a day-one difference of UZS 2,008,854 million) - as deferred income of UZS 6,518,791 million and closed 2025 with negative equity of UZS 387,931 million [3,

Notes 14-15]. By contrast, National Electric Grid of Uzbekistan JSC accepted assets transferred from Thermal Power Plants JSC as a contribution to share capital, but did not recognise the benefit embedded in international loans bearing interest rates of 1.25-3 per cent [4, Notes 9-10]. From 2026, the regulated asset base (RAB) is determined using IFRS financial statements and excludes assets received free of charge [5]; however, the financial statements do not disaggregate such assets by financing source. The objective of this study is therefore to substantiate a source-based recognition and measurement methodology. The methods employed are cross-standard comparative analysis, algorithmic modelling and scenario-based reclassification.

The central methodological proposition is that when the state provides a resource to an enterprise, the first question is whether the transfer represents a government grant or an owner contribution. IAS 20 itself provides the starting point, as transactions arising from government participation in the ownership of an entity fall outside its scope [6, para. 2(c)]. The Conceptual Framework defines a liability in terms of an obligation to transfer an economic resource and distinguishes contributions from holders of equity claims from income [7, paras. 4.26-4.27, 4.63 and 4.68]. The recognition model applies three criteria sequentially. C1 is the role of the counterparty - the state as shareholder, grantor or lender; a customer; another state-controlled entity under common control; or a market counterparty - identified from the legal form and substance of the underlying document. C2 is conditionality and repayability: a conditional or repayable resource indicates a liability, whereas an unconditional resource received from a controlling shareholder has the characteristics of an equity contribution. C3 is the transfer of control: a customer-constructed asset is recognised only when control of that asset passes to the network entity [8, paras. 66-69]. A preliminary boundary is whether the resource relates to an asset or to income [6, paras. 3 and 12]; operating subsidies compensating for tariff shortfalls are therefore outside the scope of the proposed asset methodology. The equity approach applies only when three conditions are simultaneously met: the transfer is asset-related, it is received from the controlling shareholder, and it is unconditional. The resulting algorithm produces eight financing-source codes (Table 1).

Table 1 Financing-source codes for infrastructure assets, recognition models and RAB treatment

Source code	Recognition model	Measurement basis	RAB treatment
S-SH — state as shareholder	Owner transaction: share capital or additional paid-in capital	Carrying amount or value specified in the decision	Included
S-G/U — unconditional grant (from shareholder)	Capital contribution	Cost	Subject to regulator decision
S-G/C — conditional grant	Deferred income (IAS 20.24, 20.32)	Cost; equipment at fair value	Excluded
S-L — concessional loan (state/IFI)	Loan at fair value (IFRS 9.5.1.1); concession element as equity or deferred income (IAS 20.10A)	Discounted value	Asset included; concession benefit excluded
C/T — customer asset, control transferred	Asset and revenue (IFRS 15.66-69)	Fair value (IFRS 13)	Excluded
C/N — customer asset, control not transferred	Not recognised; recorded as an “external asset” in the register	—	Not applicable
CC — transfer under common control	Recognised through equity with corresponding entries (IFRS 3.2(c))	Transferor’s carrying amount	Status retained
O — own funds / commercial debt	Cost, by components (IAS 16)	Cost	Included

Source: author’s compilation based on [3-10]. IFI = international financial institution.

The measurement basis also depends on the financing source. Because there is no active market for network infrastructure, fair value is generally classified within Level 3 and, under the cost approach, is estimated using current replacement cost adjusted for physical deterioration and functional obsolescence [9, paras. B8-B9]. A concessional loan is initially discounted at a market rate, while the difference between the nominal amount and fair value is separated as government assistance [10, para. 5.1.1 and B5.1.2A; 6, para. 10A]. For example, a UZS 100 billion, 20-year loan carrying 2 per cent annual interest has a present value of only UZS 10.4 billion when discounted at the 22.53 per cent market rate used by REPN JSC [3, Note 14]; thus, 89.6 per cent of the nominal amount economically represents government support. The depreciable base remains the full asset amount regardless of

source; the asset is not reduced by the grant. Source differences are reflected only in the credit-side classification and the RAB status, preserving the register principle of one asset - one value. Uzbekistan's national accounting system is, in substance, closer to an equity approach: under NAS No. 21, property received free of charge (account 8530) and subsidies (account 8820) are presented within equity [11]. In its IFRS statements, however, REPN JSC reclassified these balances into deferred income, which is 16.8 times larger than the reported negative equity.

The methodology was applied to REPN JSC's 2025 financial statements. Because the unconditional and conditional components of deferred income were not separately disclosed, two scenarios were modelled: Scenario A assumes that 100 per cent is unconditional; Scenario B assumes 50 per cent is unconditional. With total assets unchanged, equity moves from negative UZS 387,931 million to positive UZS 2,871,465 million under Scenario B and UZS 6,130,860 million under Scenario A. The liabilities-to-assets ratio falls from 101.4 per cent to 89.4 per cent and 77.3 per cent, respectively. The principal going-concern warning sign - negative equity - therefore disappears, leaving liquidity pressure, including a working-capital deficit of UZS 5,863,353 million, as the main uncertainty [3]. If grant-financed assets are not tagged by source, they may be incorrectly included in the RAB and inflate the return-on-capital component of the tariff by approximately UZS 489-1,435 billion per year at rates of 15 per cent (mid-point RAB return) and 22.01 per cent (market rate) [4, Note 4; 5]. This excess would ultimately be borne by consumers. Source-based recognition therefore affects reported equity, the going-concern assessment and the regulated tariff simultaneously.

Conclusions and recommendations

The accounting model for infrastructure assets should be determined not only by asset type but also by financing source. The proposed three-criterion algorithm and eight source codes adapt IFRS requirements to a state-participation environment and allow accounting decisions to be evaluated together with their tariff consequences. The following measures are recommended:

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- 1) introduce into NAS No. 5 Property, Plant and Equipment [12] a dedicated section on source-based asset recognition, incorporating the role of the state, conditionality and transfer-of-control criteria;
- 2) under NAS No. 21, split account 8820 “Subsidies” into unconditional subsidies treated as capital contributions and conditional subsidies treated as deferred income; on transition to IFRS [13], reclassify balances in accounts 8530 and 8820 using the same criteria;
- 3) extend the RAB methodology’s exclusion of assets received free of charge to all assets financed through conditional grants and customer contributions, and pass the benefit of concessional borrowing through to consumers;
- 4) require connection agreements to specify the status of customer-constructed assets, including whether control is transferred to the network company or the asset remains external to its balance sheet;
- 5) incorporate a source-based recognition section into entities’ accounting policies and add source code, legal basis, conditions, related accounting entries and RAB status as mandatory attributes in the fixed-asset register.

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