World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(RESEARCH ARTICLE)

Check for updates

STRUCTURING PROJECT FINANCE FOR ENERGY MEGAPROJECTS IN DEVELOPING COUNTRIES: EXPORT CREDIT AGENCIES, MULTILATERAL DEVELOPMENT BANKS AND LIMITED-RECOURSE RISK ALLOCATION

Dzhetpisova R.B. *

Tengizchevroil / Chevron, Atyrau, Kazakhstan.
* Corresponding Author

World Journal of Advanced Research and Reviews, , 2026, 31(03), 927–933

Publication history: Received on 24 July 2026; revised on 07 September 2026; accepted on 09 September 2026

Article DOI: https://doi.org/10.30574/wjarr.2026.31.3.2382

Copyright © 2026 Author(s) retain the copyright of this article. This article is published under the terms of the Creative Commons Attribution License 4.0

ABSTRACT

Energy megaprojects in developing countries increasingly reach capital costs of USD 30–50 billion, a scale at which conventional commercial lending capacity, single-jurisdiction legal protection and sponsor balance sheets cease to be sufficient. This paper examines how such projects are structured through the combined use of export credit agency (ECA) cover, multilateral development bank (MDB) participation and limited-recourse debt, and how these instruments reallocate risk between sponsors, lenders and host states. The study is conceptual and comparative: it builds an analytical risk-allocation framework from the project finance, development finance and credit-market literature, and applies it to three financing archetypes — commercially led, ECA-led and MDB-anchored structures. Five risk clusters are distinguished: completion and technology risk, market and offtake risk, political and regulatory risk, currency and macro-financial risk, and environmental, social and transition risk. The resulting allocation matrix is summarised in Table 1. The analysis shows that at megaproject scale the binding constraint is not the price of debt but the availability of long-tenor, contractually enforceable risk transfer, and that limited-recourse structures concentrate residual risk in the completion phase, where lender protection is weakest and where the empirical record of cost overrun is strongest. The paper identifies structural weaknesses: concentration of lending relationships, shallow local currency markets, misalignment between short commercial tenors and long asset lives, and the absence of credible mechanisms for allocating transition risk over 25–30 year horizons.

Keywords: Project finance, Energy megaprojects, Export credit agencies, Multilateral development banks, Limited-recourse debt, Bankability, Risk allocation, Completion risk

1 INTRODUCTION

Energy infrastructure in developing economies has entered a phase in which individual projects routinely absorb capital of an order previously associated with national budgets. Liquefied natural gas trains, integrated hydropower and transmission schemes, nuclear units, refinery and petrochemical complexes, and large-scale renewable and green hydrogen corridors now reach announced costs of USD 30–50 billion. Projects of this size are not simply larger versions of ordinary investments: megaproject research documents a persistent pattern of budget and schedule overrun across

sectors and decades, summarised in the proposition that such projects run over budget and over time with striking regularity [1]. For hydropower specifically, actual construction costs have been shown to exceed forecasts by margins large enough to erase the expected economic benefit of a substantial share of the sample [2]. Any account of how megaproject debt is structured must therefore begin from the fact that the construction phase is where value is most often destroyed.

Project finance is the contractual technology through which such investments are funded. Debt is advanced to a special purpose vehicle whose only assets are the project's contracts, licences and cash flows, and recourse to sponsors is limited to defined undertakings. The academic case for treating this structure as a distinct object of study rests on its combination of high leverage, concentrated equity ownership and a dense network of non-financial contracts [3], and the mechanics of the security package, the cash flow waterfall and step-in rights are set out in the standard practitioner literature [4,5]. Empirical work shows that the use of project finance is driven less by cost than by risk containment and the avoidance of contamination between project and sponsor balance sheets [6], and that project finance lending is associated with measurable investment outcomes in low-income economies [7].

A second body of work concerns the risk profile of project finance debt itself. Credit risk in project finance is not constant over the life of the loan: it is highest around project inception and declines as the asset begins to generate cash, which produces a hump-shaped term structure of credit spreads that distinguishes project loans from ordinary corporate credit [8,9]. The contractual architecture that produces this profile has been shown to operate through non-financial contracts — construction, supply and offtake agreements — whose presence measurably reduces loan spreads and supports higher leverage [10]. Creditor rights and the enforceability of security in the host jurisdiction shape the composition of the lending syndicate itself [11], and the willingness of a concentrated group of creditors to support a constrained borrower is a well-established feature of relationship lending [12].

A third body of work addresses the public institutions that make such lending possible. Loans to borrowers in politically risky countries are more likely to be structured as project finance and more likely to include a development bank in the syndicate, with the development bank acting as a political umbrella whose presence deters adverse state action [13]; related work shows that non-local debt performs a comparable function in mitigating political exposure [14]. Multilateral participation has been shown to mobilise additional private lending and to lengthen maturities [15], to reduce borrowing costs on cross-border syndicated credits [16], and to alter the structure of the syndicate itself [17]. Export credit agencies, by contrast, have received far less scholarly attention despite providing volumes of public finance to energy projects comparable to or larger than the multilateral institutions, and despite the specific role their cover plays in the structure of individual transactions [18].

A fourth strand concerns the transition context in which these structures now operate. The reallocation of credit towards low-carbon assets cannot be delivered by carbon pricing alone, because credit creation is subject to market failures that price signals do not correct [19]; reviews of renewable energy financing identify perceived country risk, tenor mismatch, currency exposure and weak offtaker credit as barriers that persist even where projects are economically viable [20]; and mission-oriented analysis argues for using directional public finance, procurement and conditionality deliberately to shape supply chains and allocate risks and rewards [21]. A critical literature reads the same instruments differently, as a de-risking state that transfers investor risk onto public balance sheets [22]. The macro consequence is well documented: a higher cost of capital in developing economies is itself a binding constraint on decarbonisation pathways [23], and the resulting problem of constructing bankability has recently been surveyed as an organising concept for infrastructure finance [24].

This paper sits at the intersection of these strands. Its purpose is to analyse how ECA cover, MDB participation and limited-recourse structuring interact in projects of USD 30–50 billion, and to identify where lender risk management in such structures remains structurally incomplete. The contribution is analytical rather than empirical: a framework that clarifies which risks are genuinely transferred, which are only repriced, and which remain with the host economy.

2 MATERIAL AND METHODS

The study is conceptual and comparative. It does not report new primary data, and it does not estimate an econometric model. Instead it constructs an analytical framework for risk allocation in very large energy projects and applies that framework to stylised financing archetypes. The materials consist of the scholarly literature listed in the references, covering four domains: the theory and practice of project finance and the risk profile of project finance debt [3,4,5,8,9,10]; the role of public financial institutions, including development banks and export credit agencies, in syndicated lending [13,15,16,17,18]; credit market structure, creditor rights and relationship lending [11,12]; and the financing of the energy transition and of megaprojects [1,2,19,20,21,22,23,24]. The scope condition throughout is the capital band identified in the topic, USD 30–50 billion, which is treated as a qualitative threshold rather than a precise boundary.

The analytical framework has three components. The first is a risk taxonomy with five clusters. Completion and technology risk covers engineering, procurement and construction performance, cost overrun, schedule slippage, interface risk between contract packages and first-of-a-kind technology. Market and offtake risk covers demand, price, offtaker creditworthiness and contract enforceability. Political and regulatory risk covers expropriation, licence revocation, tariff intervention, permitting reversal, war and civil disturbance, and transfer and convertibility restrictions. Currency and macro-financial risk covers devaluation against hard-currency debt service, inflation of local input costs and sovereign liquidity stress. Environmental, social and transition risk covers resettlement and biodiversity obligations, lender safeguard policies, litigation exposure, and the possibility that the asset's revenue basis is eroded by decarbonisation policy over its operating life.

The second component is a set of three financing archetypes against which each risk cluster is assessed. The commercially led archetype relies on sponsor equity, uncovered commercial bank tranches and capital markets debt, with public institutions absent or marginal. The ECA-led archetype places officially supported export credits, guarantees and insurance at the centre of the debt structure, with commercial banks lending under sovereign-backed cover and with procurement tied to the supplying jurisdictions. The MDB-anchored archetype places multilateral and bilateral development institutions at the centre, using direct A loans, syndicated participations, partial risk and partial credit guarantees, political risk insurance and concessional or blended tranches, together with policy conditionality and safeguard requirements. Real transactions of this size are hybrids; the archetypes are used as analytical reference points, not as descriptions of individual deals. The intersection of the taxonomy and the archetypes yields the allocation matrix presented as Table 1 in the following section.

The third component is a set of evaluation criteria applied consistently to each archetype: achievable tenor relative to asset life and payback; bankability of the residual risk left with uncovered lenders; effective cost and availability of debt as distinct from headline margin; robustness of the security package and enforceability of step-in rights in the host jurisdiction; the degree and legitimacy of conditionality imposed on the host state; and the distribution of residual risk between private lenders, public institutions and the host economy. Propositions are derived from the cited literature and from the internal logic of limited-recourse contracting, and are stated as analytical claims rather than as measured effects.

Two limitations follow from this design. First, because megaproject financings are documented under confidentiality, and because the transaction databases maintained by the OECD and by the export credit insurance industry are not publicly accessible, the population of relevant transactions is not observable in a form that would permit statistical testing; the analysis is therefore illustrative of mechanisms and cannot quantify their relative importance. Second, much of the empirical literature drawn on here concerns project finance loans in general rather than the USD 30–50 billion band specifically, so its application at that scale is by extension. No transaction-specific figures, institutional cover ratios or country data are asserted beyond the capital band stated in the topic.

3 RESULTS AND DISCUSSION

The first result concerns discontinuity of scale. Below roughly the low billions, a project's financing is a problem of pricing risk; at USD 30–50 billion it becomes a problem of manufacturing capacity to bear risk. Single-name and single-country exposure limits, regulatory capital treatment of long-dated illiquid assets, and internal concentration ceilings mean that no realistic commercial syndicate can absorb such a facility on uncovered terms at tenors matching asset life. The binding constraint is therefore availability of long-tenor risk transfer rather than the margin over reference rates. This reframes the function of ECAs and MDBs: they are not primarily cheap lenders but institutions that convert an unsyndicable exposure into a set of tranches each of which fits a different balance sheet. The commercially led archetype fails not on cost but on availability: tenors compress, uncovered residual risk exceeds what syndicate members will hold, and the structure either shrinks the project or does not close. This is consistent with the finding that the choice of project finance is driven by risk containment rather than by the price of debt [6], and with evidence that multilateral participation lengthens achievable maturities rather than merely cheapening them [15].

The second result concerns the specific contribution of export credit agencies. ECA involvement performs three distinct functions that are often conflated. It substitutes sovereign or quasi-sovereign credit for project credit on the covered portion, allowing commercial banks to fund at long tenor against an exposure that is, in risk terms, to the ECA's own state rather than to the project. It supplies political risk mitigation that private insurance markets cannot write in the required size or duration — the same de-risking function that has been shown to unlock commercial co-financing in ECA-backed energy transactions [18]. And it channels procurement towards the supplying country's industrial base, which is the price of the cover. The third function has consequences beyond finance: tied procurement narrows the contractor field, can raise equipment costs, and constrains local content policy in the host country. Mission-oriented analysis treats such conditionality as a legitimate policy instrument, but insists that conditions be designed to shape supply chains and to allocate rewards as well as risks [21]. Applied to ECA cover, the relevant question is not whether

conditionality exists, but whose industrial development it serves — a question sharpened by evidence that ECA energy portfolios remain heavily weighted towards hydrocarbon value chains and that the greening of those portfolios has so far shifted finance towards high-income rather than developing recipients [18].

The third result concerns multilateral development banks, whose contribution to lender risk management is only partly financial. Direct lending and guarantees relieve the syndicate of a portion of exposure, but the more consequential effects operate through information and through the host state's incentives. MDB participation imports standardised safeguard and procurement requirements, an appraisal record that commercial lenders can rely on, and a continuing institutional relationship with the host government that raises the political cost of unilateral tariff or licence intervention — the political umbrella effect identified in the empirical literature [13]. The measurable consequences are documented: participation crowds in private bank credit and extends tenors [15], reduces spreads on cross-border syndicated lending [16], and changes the composition of the syndicate itself [17]; state investment banks have been shown to play an analogous role in renewable financing [26]. The argument that credit allocation is subject to failures that carbon pricing does not resolve is directly applicable: where commercial banks will not lend to low-carbon assets even under favourable price signals, non-price instruments are required, and MDB structuring is one such instrument [19]. Reviews of renewable financing likewise identify guarantee and de-risking instruments rather than tariffs alone as the operative response to persistent investment barriers [20].

Table 1: Allocation of the five risk clusters across the three financing archetypes.

Risk cluster	Commercially led	ECA-led	MDB-anchored
Completion and technology	Retained by lenders through sponsor support, EPC liquidated damages and contingent equity; uncovered exposure is at its maximum	Cover typically attaches at or after completion, so construction risk remains with sponsors and the EPC chain	Appraisal, supervision and procurement rules lower information cost, but the exposure itself remains sponsor-borne
Market and offtake	Transferred to offtakers by take-or-pay contracts; offtaker credit becomes the binding constraint	Buyer-credit structures shift the exposure to the obligor or its sovereign guarantor rather than to the project	Partial credit guarantees and concessional tranches make marginal offtake arrangements bankable
Political and regulatory	Priced rather than transferred; tenor compresses as country risk rises	Core function of the archetype: cover in sizes and durations private insurers do not write	Mitigated relationally through the continuing institutional relationship with the host state
Currency and macro-financial	Hard-currency debt against local-currency or commodity-linked revenue; long-tenor hedging unavailable	Cover follows the supplier's currency, so the mismatch is left substantially unaddressed	Local-currency windows and partial risk guarantees address it directly but are limited in size relative to senior debt
Environmental, social and transition	Managed to market minimum standards; stranding risk over the debt life is largely unpriced	Increasingly constrained by the OECD Arrangement and by national climate mandates on officially supported credits	Safeguards are binding and supervised; greatest leverage for transition-contingent contractual features

The fourth result concerns the mechanics of limited recourse and the location of residual risk. Lender protection is assembled from a security package over shares, accounts and material contracts, a cash flow waterfall subordinating distributions to debt service and reserve accounts, financial covenants and lock-up tests, direct agreements with counterparties, and step-in rights. The analytical point is that this architecture is strongest during operation and weakest during construction. Before completion there is no cash flow to trap, the security is over an unfinished asset with low liquidation value, and enforcement would leave lenders holding a half-built plant in a jurisdiction whose courts they have not tested. This is not merely a contractual observation: it is precisely the profile identified empirically in the term structure of project finance credit spreads, where risk peaks around inception and declines thereafter [8,9], and it coincides with the phase in which megaproject cost overruns are concentrated [1,2]. Consequently sponsor support, EPC liquidated damages, contingent equity and cost overrun facilities do the real work of the structure, and the network of non-financial contracts that carries them is what makes the debt bankable at all [10]. Completion risk is the analytical centre of lender risk management at this scale.

Table 1 makes the asymmetry visible. Reading across the completion row, no archetype transfers construction risk away from the sponsor group: the public institutions enter the structure mainly at or after the point at which the asset begins to perform. Reading down the ECA-led column, cover is concentrated in the political and offtake clusters and is largely silent on currency and completion. The MDB-anchored column is the only one in which every cluster receives some instrument, which is the analytical basis for the conclusion that leverage over transition-contingent terms is greatest there.

A fifth result follows from the structure of the lender group itself. Megaproject syndicates are small, repeatedly composed of the same institutions, and bound to the borrower for decades. This is a concentrated credit market by construction, and the relationship-lending literature indicates that concentration is not simply a distortion: concentrated creditors are more willing to support constrained borrowers because they can internalise the benefits of doing so [12]. The composition of the syndicate is itself shaped by creditor rights and enforceability in the host jurisdiction [11] and by the presence of a development institution [17]. In megaproject workouts this mechanism is visible in the willingness of core lenders to reschedule, to fund completion overruns and to accept covenant resets rather than to enforce. The counterpart is bargaining power: a borrower dependent on a narrow group of relationship lenders and their ECA and MDB anchors has limited ability to refinance opportunistically, and the terms of restructuring reflect that asymmetry. Risk management is thus partly contractual and partly relational, and the relational component is difficult to document ex ante.

A sixth result concerns funding sources outside the bank and bond channels. Contract-theoretic work on trade credit shows that suppliers may lend more liberally than banks because inputs are harder for an opportunistic borrower to divert than cash, which helps explain why supplier finance is comparatively more prevalent where credit markets are less developed [25]. The analogy to megaprojects is close. Equipment vendors, EPC contractors and technology licensors routinely accept deferred payment, retention, vendor notes and equity participation, effectively extending in-kind credit whose collateral is the delivered plant and whose enforcement relies on the contractor's continuing role in the project. Such finance is short in maturity relative to project life, and it is therefore complementary to ECA and MDB debt rather than a substitute for it. Recognising vendor exposure as a distinct tranche improves the accuracy of the allocation matrix, because vendor claims behave differently from bank claims in distress.

The seventh result concerns constraints located in the host economy rather than in the project. Hard-currency debt against local-currency or commodity-linked revenue creates an exposure that no security package can neutralise, and shallow domestic capital markets prevent the natural hedge of local-currency funding at long tenor. This is the cluster in which Table 1 shows the weakest instruments across all three archetypes. The macroeconomic consequence is documented: a systematically higher cost of capital in developing economies materially reduces the volume of low-carbon capacity that a given decarbonisation pathway can deliver, producing a self-reinforcing investment trap in which perceived risk raises financing cost and high financing cost sustains perceived risk [23]. The critical literature draws the further inference that instruments designed to insulate international investors from these exposures transfer them to the host state's balance sheet rather than eliminating them [22]. For a project of USD 30–50 billion, local-currency mobilisation is realistically confined to subordinated and ancillary tranches; the senior debt remains hard-currency, and the mismatch remains a sovereign problem in all but name.

The eighth and final result concerns transition risk over the operating life of the asset. A megaproject financed today may carry debt for two to three decades, a horizon over which the policy and demand environment for hydrocarbon-linked assets is genuinely uncertain. Existing structures manage this poorly. Take-or-pay contracts transfer volume risk to offtakers who may themselves be exposed to the same policy shift; safeguard covenants address flow impacts rather than stranding; and shortened tenors merely relocate the problem to refinancing risk. Non-price instruments and directional public finance have been proposed precisely because price signals alone do not reallocate credit at the required speed and scale [19], and mission-oriented conditionality has been advanced as a means of tying public support to systemic transition objectives [21]. The direction of travel among ECAs — restrictions on coal, contested negotiations over oil and gas cover, and net-zero alignment commitments — shows that the instrument is available and already in partial use [18]. Synthesising these arguments with Table 1 yields a practical implication: where public institutions provide the risk transfer that makes a megaproject bankable, they possess the leverage to require transition-contingent features — repricing triggers, reserve build-up against decommissioning, or conversion options — and, in the MDB-anchored archetype, that leverage is greatest. Whether it is exercised is an institutional and political question, not a technical one.

4 CONCLUSION

Financing an energy megaproject of USD 30–50 billion in a developing country is best understood as an exercise in constructing bankability rather than in pricing an existing risk [24]. The analysis indicates that export credit agencies and multilateral development banks are decisive not because of the volume of capital they supply but because of the

functions they perform: substituting sovereign-grade credit for project credit on covered tranches, supplying political risk mitigation in sizes and durations that private markets do not write, importing standardised appraisal and safeguard frameworks that reduce lender information costs, and creating an institutional relationship with the host state that raises the cost of adverse intervention. Limited-recourse structuring then distributes what remains, but its protective architecture is asymmetric across time: strong once cash flows exist, weak while the asset is under construction. Completion risk is therefore the analytical centre of lender risk management at this scale, and it is also where the empirical record of megaproject performance is least reassuring.

Three implications follow. First, structuring choices are policy choices: tied procurement under ECA cover and conditionality under MDB participation both shape which industries benefit and which risks the host economy retains, so conditionality should be assessed on its developmental content rather than on its presence. Second, the residual exposures that no security package resolves — currency mismatch against local-currency revenue, shallow domestic capital markets, and transition risk over a 25–30 year debt life — require instruments outside the standard project finance toolkit, including local-currency mobilisation, non-price credit allocation measures and transition-contingent contractual features. Third, the concentration of megaproject lending in a small, repeatedly composed group of institutions is a permanent structural feature with two faces: it supports forbearance and workout flexibility in distress, and it constrains borrower bargaining power throughout. Because the framework advanced here is conceptual, its propositions are testable rather than tested. Comparative case work on completed megaproject financings, and on the observed behaviour of covered and uncovered tranches in restructuring, would provide the empirical basis this literature currently lacks; the inaccessibility of ECA and export-credit transaction databases remains the principal obstacle to that work.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Disclosure of conflict of interest

The author is employed by Tengizchevroil LLP, an operator of large-scale energy projects, and by Chevron. The views expressed in this paper are the author's own and do not represent the position of the employer or of its shareholders. No transaction-specific or otherwise confidential information has been used.

REFERENCES

[1] Flyvbjerg B. What you should know about megaprojects and why: an overview. Project Management Journal [Internet]. 2014 [cited 2026 Sep 8];45(2):6–19. Available from: https://doi.org/10.1002/pmj.21409

[2] Ansar A, Flyvbjerg B, Budzier A, Lunn D. Should we build more large dams? The actual costs of hydropower megaproject development. Energy Policy [Internet]. 2014 [cited 2026 Sep 8];69:43–56. Available from: https://arxiv.org/abs/1409.0002

[3] Esty BC. Why study large projects? An introduction to research on project finance. European Financial Management [Internet]. 2004 [cited 2026 Sep 8];10(2):213–224. Available from: https://doi.org/10.1111/j.1354-7798.2004.00247.x

[4] Yescombe ER. Principles of project finance. 2nd ed. Waltham (MA): Academic Press; 2014.

[5] Gatti S. Project finance in theory and practice: designing, structuring, and financing private and public projects. 2nd ed. Waltham (MA): Academic Press; 2012.

[6] Steffen B. The importance of project finance for renewable energy projects. Energy Economics [Internet]. 2018 [cited 2026 Sep 8];69:280–294. Available from: https://doi.org/10.1016/j.eneco.2017.11.006

[7] Kleimeier S, Versteeg R. Project finance as a driver of economic growth in low-income countries. Review of Financial Economics [Internet]. 2010 [cited 2026 Sep 8];19(2):49–59. Available from: https://ideas.repec.org/a/eee/revfin/v19y2010i2p49-59.html

[8] Sorge M. The nature of credit risk in project finance. BIS Quarterly Review [Internet]. 2004 Dec [cited 2026 Sep 8];91–101. Available from: https://bis.org/publ/qtrpdf/r_qt0412h.htm

[9] Sorge M, Gadanecz B. The term structure of credit spreads in project finance. International Journal of Finance and Economics. 2008;13:68–81.

[10] Corielli F, Gatti S, Steffanoni A. Risk shifting through nonfinancial contracts: effects on loan spreads and capital structure of project finance deals. Journal of Money, Credit and Banking [Internet]. 2010 [cited 2026 Sep 8];42(7):1295–1320. Available from: https://doi.org/10.1111/j.1538-4616.2010.00342.x

[11] Esty BC, Megginson WL. Creditor rights, enforcement, and debt ownership structure: evidence from the global syndicated loan market. Journal of Financial and Quantitative Analysis. 2003;38(1):37–59.

[12] Petersen MA, Rajan RG. The effect of credit market competition on lending relationships. The Quarterly Journal of Economics [Internet]. 1995 [cited 2026 Sep 8];110(2):407–443. Available from: https://doi.org/10.2307/2118445

[13] Hainz C, Kleimeier S. Political risk, project finance, and the participation of development banks in syndicated lending. Journal of Financial Intermediation [Internet]. 2012 [cited 2026 Sep 8];21(2):287–314. Available from: https://doi.org/10.1016/j.jfi.2011.10.002

[14] Müllner J, Dorobantu S. Overcoming political risk in developing economies through non-local debt. Journal of International Business Policy [Internet]. 2023 [cited 2026 Sep 8];6(2):159–181. Available from: https://ideas.repec.org/a/pal/jintbp/v6y2023i2d10.1057_s42214-022-00143-y.html

[15] Broccolini C, Lotti G, Maffioli A, Presbitero AF, Stucchi R. Mobilization effects of multilateral development banks. The World Bank Economic Review. 2021;35(2):521–543.

[16] Gurara D, Presbitero A, Sarmiento M. Borrowing costs and the role of multilateral development banks: evidence from cross-border syndicated bank lending. Journal of International Money and Finance [Internet]. 2020 [cited 2026 Sep 8];100. Available from: https://ideas.repec.org/a/eee/jimfin/v100y2020ics0261560619300476.html

[17] Degl'Innocenti M, Frigerio M, Zhou S. Development banks and the syndicate structure: evidence from a world sample. Journal of Empirical Finance [Internet]. 2022 [cited 2026 Sep 8];66:99–120. Available from: https://doi.org/10.1016/j.jempfin.2022.01.002

[18] Peterson M, Downie C. The international political economy of export credit agencies and the energy transition. Review of International Political Economy [Internet]. 2023 [cited 2026 Sep 8]. Available from: https://doi.org/10.1080/09692290.2023.2272845

[19] Campiglio E. Beyond carbon pricing: the role of banking and monetary policy in financing the transition to a low-carbon economy. Ecological Economics [Internet]. 2016 [cited 2026 Sep 8];121:220–230. Available from: https://doi.org/10.1016/j.ecolecon.2015.03.020

[20] Qadir SA, Al-Motairi H, Tahir F, Al-Fagih L. Incentives and strategies for financing the renewable energy transition: a review. Energy Reports [Internet]. 2021 [cited 2026 Sep 8];7:3590–3606. Available from: https://doi.org/10.1016/j.egyr.2021.06.041

[21] Andreoni A, Creamer K, Mazzucato M, Steyn G. How can South Africa advance a new energy paradigm? A mission-oriented approach to megaprojects. Oxford Review of Economic Policy [Internet]. 2022 [cited 2026 Sep 8];38(2):237–259. Available from: https://doi.org/10.1093/oxrep/grac007

[22] Gabor D. The Wall Street Consensus. Development and Change [Internet]. 2021 [cited 2026 Sep 8];52(3):429–459. Available from: https://doi.org/10.1111/dech.12645

[23] Ameli N, Dessens O, Winning M, Cronin J, Chenet H, Drummond P, et al. Higher cost of finance exacerbates a climate investment trap in developing economies. Nature Communications [Internet]. 2021 [cited 2026 Sep 8];12:4046. Available from: https://doi.org/10.1038/s41467-021-24305-3

[24] Meng Z. Infrastructure project finance and investment management: bankability, risk allocation, and capital recycling. Journal of Economic Surveys [Internet]. 2026 [cited 2026 Sep 8]. Available from: https://doi.org/10.1111/joes.70150

[25] Burkart M, Ellingsen T. In-kind finance: a theory of trade credit. American Economic Review [Internet]. 2004 [cited 2026 Sep 8];94(3):569–590. Available from: https://doi.org/10.1257/0002828041464579

[26] Waidelich P, Steffen B. Renewable energy financing by state investment banks: evidence from OECD countries. Energy Economics. 2024;132:107455.