TCX INSIGHTS

A global solution
for local currency



Currency risk and climate finance

Why local currency belongs at the center of how climate finance is delivered

NOVEMBER 2026

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ABOUT TCX

TCX is a development finance initiative backed by a shareholder base that includes FMO, EBRD, KfW and IFC, as well as the European Commission and Dutch, Swiss, British, French, and German governments and other DFIs and microfinance vehicles. TCX protects borrowers in emerging and frontier markets from currency risk by facilitating currency hedges that transfer the risk to TCX's balance sheet. TCX offers derivative instruments – cross-currency swaps and FX forwards – in currencies not or insufficiently covered by commercial parties. Since starting operations in 2007, TCX has hedged a total volume of more than USD 23 billion in development loans across 72 currencies, as of September 2026.

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THE ORIGINAL SIN

The original sin in the climate finance era

The case for climate finance and energy access in developing economies is well established. Governments, donors, and multilateral institutions have spent the past few decades negotiating and pledging climate commitments while creating the platforms to scale investment in power generation and energy access. These commitments include the USD 300 billion per year climate finance floor agreed at COP29 and the USD 1.3 trillion aspiration set out in the Baku to Belém Roadmap, alongside delivery platforms ranging from Power Africa and Sustainable Energy for All (SE4ALL) in the 2010s to the Just Energy Transition Partnerships and the Mission 300 initiative, which aims to connect 300 million Africans to electricity by 2030.

700m

people without electricity today, down from approximately 1.2 billion in 2010.

>50%

fall in solar and wind generation costs over the past decade.

Beyond the pledges, real progress has been made. Solar and wind generation costs have fallen by more than 50% over the past decade, with countries such as South Africa, Brazil, and India helping to lead the energy transition, while Kenya, Uruguay, and Costa Rica now generate the overwhelming majority of their electricity from renewable sources. On the access side, the share of the global population without electricity has fallen from approximately 1.2 billion in 2010 to around 700 million today.

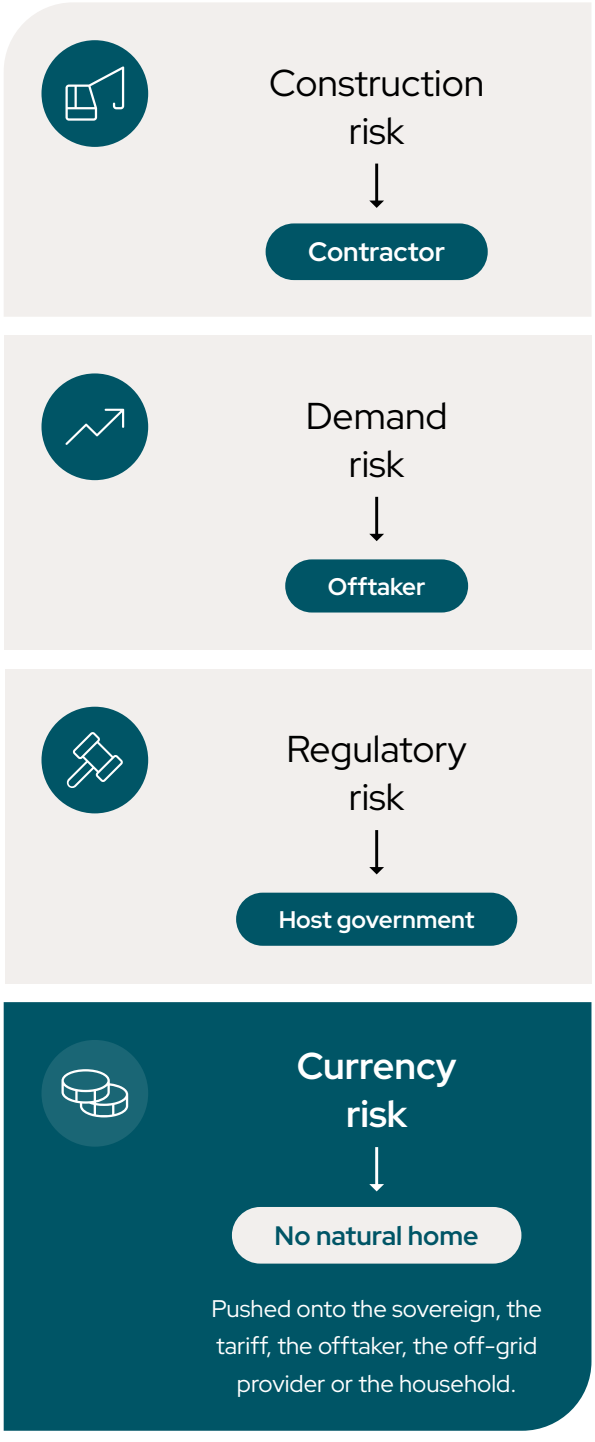
Despite these gains, the energy transition in many developing countries remains slower, more expensive, and more fragile than the commitments might imply. One reason for this is that the majority of climate finance pledged reaches developing economies in hard currency, not in the currencies they earn their revenues in. This is the 'original sin', the inability of most developing countries to borrow long-term in their own currencies, a problem that has plagued development finance for decades and that climate finance has inherited.

Project finance works by giving each risk a proper home. Construction risk goes to the contractor, demand risk to the offtaker, regulatory risk to the host government, and each is transferred to the party best able to carry it. Currency risk breaks that logic because no single party is placed to absorb it within the project structure. The utility earns local currency and cannot carry hard-currency obligations, the developer has no FX balance sheet, the lender does not want the exposure, and hedging markets in most developing currencies are thin or absent. So the risk is not placed, but rather pushed onto whichever balance sheet the contract can reach, whether the sovereign through guarantees, the tariff through dollar indexation, the offtaker, or the household, none of which is equipped to carry it.

The currency mismatch shapes how clean energy projects get financed and what they cost to build, and how countries borrow to recover when climate shocks land. When external shocks hit and FX risk is unmanaged, the consequences are severe and immediate. Debt-service obligations rise as local currencies fall, fiscal space drains, and the same balance sheets that need to finance the energy transition absorb new dollar liabilities instead. The Iran war of early 2026 made this visible in real time, with emerging-market central banks spending billions in reserves to defend their currencies and new sovereign borrowing stalling as costs spiked.

> This TCX Insight traces where the cost of that mismatch lands, how it surfaces under stress, where the architecture to absorb it is starting to work, and what it will take to extend it.

Where each project risk lands



THE COST OF FX RISK

The cost of foreign exchange risk

Much of the climate finance pledged at COP29 and beyond will deliver less than its face value, and one of the primary reasons is that hard-currency financing creates a currency mismatch that erodes the value of the investment over time. The mismatch shows up at two connected levels: in the projects that get built and in the sovereigns that borrow for recovery.



15.6%

Weighted average cost of capital for power projects in Africa.

2–5%

Typical cost of capital in Western Europe and the United States.

Renewable energy project finance

Research by Clean Air Task Force puts the weighted average cost of capital for power projects across African countries at 15.6% on average, against the 2 to 5% typical in Western Europe and the United States.[1] Within developing countries, transaction data suggest that currency accounts for part of that gap. In a dataset of 845 infrastructure transactions across 66 developing countries, local-currency loans priced about 105 basis points below hard-currency loans once converted into dollar terms, although the authors note that hedging availability and borrower selection may also play a part.[2] Modelling a 500 MW solar portfolio across Kenya, Nigeria, and Ghana, a 2025 study from the Energy for Growth Hub found that local-currency financing would reduce the cost of capital by 21–31% and lower the levelized cost of electricity by 20–29%.[3] Put differently, currency is not a side cost in these projects; it is one of the structural reasons clean energy is more expensive to build in Africa than almost anywhere else.

21–31%

lower cost of capital with local-currency financing, modelled for a 500 MW solar portfolio in Kenya, Nigeria and Ghana.

1 Prudence Dato, Michael Dioha, Hélyoth Hessou, Boris Houenou, Brian Mukhaya, Michael Adu Okyere, Lily Odarno, "Computation of weighted average cost of capital (WACC) in the power sector for African countries and the implications for country-specific electricity technology cost," Applied Energy, Volume 397, 2025, 126333, Visit →

2 Ely Sandler, Daniel P. Schrag and Cameron Hepburn, "The Cost of Capital in Developing Countries," Research Square preprint, not peer reviewed (30 September 2026), Visit →

3 Dian Baldé and Meron Tesfaye, The Quantifiable Advantages of Local Currency on African Energy Projects, Energy for Growth Hub (2025). Modelling of a 500 MW solar portfolio across Kenya, Nigeria, and Ghana.

"There is a significant impact of currency on the cost of capital for infrastructure projects within our dataset. Once all projects are converted to a dollar basis, local-currency loans cost ~100 bps less than hard-currency loans, consistent with lenders charging a premium to offset FX risk from debt and revenues being in different currencies."

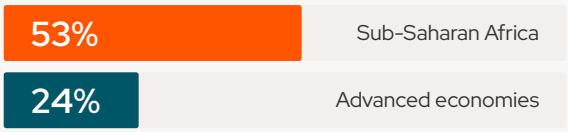


Ely Sandler
Research Fellow, Harvard Kennedy School

2.3%

of global renewable energy investment went to Africa in 2024, with the highest cost of capital of any region.

Share of investment from international sources, 2022/23.



The figures help explain the investment patterns documented in the International Energy Agency's 2025 World Energy Investment report.[4] Africa attracted approximately 2.3% of global renewable energy investment in 2024, with the highest cost of capital of any region. It is also the only region where most renewable energy investment comes from outside its borders. The International Renewable Energy Agency (IRENA) and Climate Policy Initiative (CPI) found that 53% of Sub-Saharan Africa's investment originated from international sources in 2022/2023, against 24% for advanced economies, where deep domestic capital markets fund the bulk of the transition.[5]

The consequences of leaving this exposure unhedged can be significant.

Four country examples, overleaf ⟶

4 International Energy Agency, World Energy Investment 2025.
5 IRENA and Climate Policy Initiative, Global Landscape of Renewable Energy Finance 2025. Source-composition data are a 2022/2023 average; comparable 2024 data are not yet available.

Zambia

ZMW

12→22

kwacha per US dollar at its low

The state electricity utility (ZESCO) carried dollar-indexed power purchase agreements with independent producers even as the kwacha fell from twelve to the dollar to a low of twenty-two, so the local-currency cost of those obligations climbed steeply. By the time the new government took office in 2021, ZESCO's total debt had reached USD 3.5 billion, with capacity payments to independent producers absorbing close to half of the utility's revenue.

Pakistan

PKR

PKR 2.1trn

power-sector capacity payments

Capacity payments to independent power producers were indexed to the US dollar, so as the rupee fell, the local-currency cost of those payments roughly doubled, rising far faster for foreign-funded, dollar-denominated plants than for locally funded ones. Dollar indexation, alongside the take-or-pay structure of the contracts and rising fuel-import costs, pushed power-sector capacity payments past PKR 2.1 trillion and prompted four rounds of contract renegotiation since 1998.

Ghana

GHS

−50%+

cedi value lost before the 2023 IMF program

The cedi lost more than 50% of its value before the country's 2023 IMF program, rendering its hard-currency independent power producer contracts unworkable. The government restructured five of them and sought to renegotiate take-or-pay terms that had left it paying for capacity it did not use, and it absorbed roughly USD 500 million in foreign-exchange losses on hard-currency energy projects where sovereign guarantees had made the state the residual currency risk-taker.[6]

Nigeria

NGN

460→1,500+

naira per US dollar after the 2023 float

After the naira was floated in 2023, the currency fell from around 460 to over 1,500 to the dollar, sharply raising the local-currency cost of the power sector's dollar-denominated obligations. Generation companies' arrears climbed past NGN 4 trillion, and in 2026 Nigeria and the World Bank cancelled USD 717.7 million in undisbursed power-sector financing, with the Bank citing naira depreciation and frozen tariffs as annual tariff shortfalls rose from NGN 140 billion in 2022 to around NGN 1.9 trillion.

6 Baldé and Tesfaye (2025).

COUNTER-EXAMPLE

South Africa's REIPPPP

South Africa's Renewable Energy Independent Power Producer Procurement Programme offers a counter-example. Solar tariffs fell by more than 80% in nominal terms between Bid Window 1 in 2011 and Bid Window 7 in 2024, driven largely by falling technology costs and competitive bidding.[7] Local currency helped make the program bankable at scale. Power purchase agreements were denominated in rand, and South African lenders provided more than 80% of project debt in the early bid windows.[8] Where competitive procurement and local-currency financing can be combined, the cost premium can be substantially reduced.

Lower financing costs reach consumers through competitive tariffs or cost-reflective regulation. A local-currency tariff also adds stability, because it does not jump when the exchange rate moves.

+1.17

percentage points

climate-vulnerability premium in the cost of sovereign debt.



Sovereign debt and climate recovery

For climate-vulnerable sovereigns, foreign exchange risk shapes the cost of borrowing in ways that are measurable and that compound under stress. But what makes that exposure dangerous is not overall FX exposure, but how much is left open or "unhedged." Across developing economies, the countries that suffer the most currency stress are not those with the most public debt, nor those with the largest share in foreign currency. They are the ones with the weakest net FX position, the foreign-currency debt left uncovered once reserves are set against it. Hedging shrinks that open position in the same way reserves do.[9]

An August 2025 study in Oxford Open Economics, analyzing a panel of 46 developing countries between 1996 and 2016, identified a climate-vulnerability premium of 1.17 percentage points in the cost of sovereign debt, a premium that could not be explained by macroeconomic fundamentals.[10] Across the climate-vulnerable economies that later formed the V20 group, the additional interest paid because of this exposure has been estimated at USD 62 billion between 2007 and 2016. European Central Bank research finds the same pattern in how disaster shocks are priced. A major storm raises sovereign yields by roughly 22% in high-debt countries, and because emerging economies borrow at higher rates to begin with, that same proportional shock lands as more than 140 basis points of added cost, against roughly 66 in a comparable advanced economy.[11] The cost of borrowing rises sharply at precisely the moment a country most needs to fund recovery.

7 Anton Eberhard and Raine Naude, The South African Renewable Energy IPP Procurement Programme: Review, Lessons Learned and Proposals to Reduce Transaction Costs, University of Cape Town Graduate School of Business (2017), pp. 28 and 31; Department of Electricity and Energy, REIPPPP Bid Window 7: List of Successful Bidders (December 2024).
8 Eberhard and Naude (2017), pp. 2 and 36–37.
9 OGResearch, "FX Risk and Climate Resilience," research brief commissioned by TCX (2026) unpublished.
10 Kling, Lo, Murinde and Volz, "Climate Vulnerability and the Cost of Debt," Oxford Open Economics 4, odaf003 (August 2025). The V20 interest-cost figure is from the same study.
11 Anyfantaki, Blix Grimaldi, Madeira, Malovaná and Papadopoulos, "Decoding climate-related risks in sovereign bond pricing: a global perspective," ECB Working Paper No. 3135 (October 2025).

FX risk also reaches sovereigns through the guarantees they extend to energy-sector projects. Until recently, sovereign guarantees and hard-currency PPAs were close to standard practice in power project finance in countries with fragile currencies. Developers sought them, and donors and lenders encouraged them as the way to bring private capital into markets it would not otherwise enter, with technical assistance programs advising governments on how to negotiate them.[12] They did bring investment in, but their fiscal cost has become increasingly clear. In a 2025 working paper for the Institute of Development Policy at the University of Antwerp, the authors argue that the traditional model of sovereign guarantees and hard-currency PPAs is increasingly unsustainable, exacerbating fiscal vulnerabilities and undermining long-term resilience.[13] The IMF found in 2024 that around 40% of governments' unidentified debt stems from contingent liabilities and fiscal risks, much of it tied to losses at state-owned enterprises.[14] Sovereign guarantees in this architecture do not eliminate currency risk; they transfer it from the project to the state, where it sits off the balance sheet until depreciation forces it into view. Even with hard-currency PPAs and sovereign guarantees in place, currency volatility continues to raise lenders' risk perception and deter foreign investment, meaning the cost is paid twice, once in the fiscal burden when the guarantee triggers, and again in the persistent risk premium that the guarantee was meant to remove.[15]

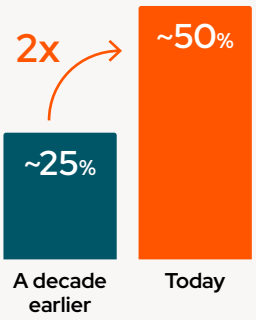
> "A sovereign guarantee on a hard-currency PPA rarely shows up in a country's debt figures when it is signed. At most it is recorded as a contingent liability. When the local currency falls, the state utility's payments rise in local terms while its revenues do not, and once the utility can no longer pay, the guarantee is called and the obligation becomes government debt. Even without a formal guarantee, governments often end up absorbing these obligations to keep the utility solvent."



Mohamed Badissy
Co-Director, Power Contract Transparency, Energy for Growth Hub

12 Wikus Kruger and Danny Cassimon, "The Currency Risk Challenge in African Power Finance: Structures, Politics, and Emerging Responses," IOB Working Paper 2025.12, Institute of Development Policy, University of Antwerp (2025), p. 18.
13 Kruger and Cassimon (2025).
14 IMF, Fiscal Monitor (October 2024); see also "Global Public Debt Is Probably Worse Than It Looks," IMF (October 2024).
15 Baldé and Tesfaye (2025).

The share of low-income countries in or at high risk of debt distress has doubled in a decade.



7%

of high-risk low-income-country debt restructured under the G20 Common Framework in five years.

Climate disasters then drive countries deeper into debt, and the debt almost always lands in hard currency. An IMF analysis of eleven major climate disasters in developing countries between 1992 and 2016, each with damages exceeding 20% of GDP, found that public debt rose from an average of 68% of GDP in the year of the event to 75% within three years.[16] Recent evidence suggests the poorest borrowers are hit hardest. A study of major disasters across up to 66 countries found that IDA-eligible borrowers see capital outflows and a weaker real exchange rate in the quarters that follow.[17] Dominica's debt trajectory after Hurricane Maria in 2017 put the country on an upward debt path that the IMF's debt sustainability analysis now addresses through a dedicated catastrophic climate event scenario. Mozambique's recovery from Cyclones Idai and Kenneth in 2019 required external borrowing that added to a debt burden already in distress.

By early 2026, nearly half of low-income countries assessed under the IMF–World Bank framework were in or at high risk of debt distress, twice the share of a decade earlier,[18] and the G20 Common Framework had restructured only about 7% of the high-risk low-income-country debt stock, USD 13.6 billion of an estimated USD 171 billion, in five years of operation.[19] The same governments that absorb currency losses on energy projects then pay again when they borrow to recover.

16 IMF analysis of eleven major climate disasters in developing countries, 1992–2016, each with damages exceeding 20% of GDP.
17 Lo, Y.C. and Volz, U. (2025), "The Impacts of Disasters on Capital Flows, International Reserves and Exchange Rates: Implications for Public Sector Financial Risk Management and Development Lenders," SOAS Department of Economics Working Paper No. 267.
18 IMF–World Bank Low-Income Country Debt Sustainability Framework database (2025); World Bank, Fiscal Vulnerabilities in Low-Income Countries (2024).
19 ONE Campaign, analysis of G20 Common Framework debt relief (October 2025).

A RECURRING STRESS TEST

Energy shocks and currency depreciation



THREE SHOCKS IN SIX YEARS

2020

Covid pandemic

Collapse in global trade and the flight to dollar safety.

2022

Russian invasion of Ukraine

Food and fuel import bills widened sharply.

2026

Iran war

Around 10.1 million barrels per day of oil supply lost in March 2026.

Three distinct shocks with three distinct transmission mechanisms. Yet for many emerging and developing economies the financial consequences took a similar shape.

Foreign exchange risk becomes most visible under stress. Each major shock of the past six years has tested the same architecture and exposed the same underlying vulnerability within emerging markets. The Covid pandemic of 2020 and 2021, the Russian invasion of Ukraine in 2022, and the Iran war of early 2026 are three distinct shocks with three distinct transmission mechanisms. Yet for many emerging and developing economies the financial consequences took a similar shape. Reserves were drawn down to defend currencies, sovereign issuance was pulled or postponed, emergency lending arrived in hard currency on balance sheets already short of dollars, and the fiscal space to finance the transition narrowed precisely when these countries could least afford it.

The Covid pandemic produced this pattern as the collapse in global trade and the flight to dollar safety in early 2020 left emerging and frontier markets supporting currencies, drawing down reserves, and seeking emergency hard-currency lending across the IMF's Rapid Financing Instrument, the World Bank's fast-disbursing facility, and regional development banks. Between January 2020 and February 2021, Sub-Saharan Africa accounted for 41% of all sovereign downgrades globally, despite having significantly less initial economic exposure to the pandemic itself than advanced economies. Currency vulnerability played a substantial role, as external shocks exposed the fiscal fragility amplified by foreign-currency debt burdens.

The Russian invasion of Ukraine in February 2022 added a second layer of stress before the first had been absorbed. Food and fuel import bills widened sharply across Sub-Saharan Africa and South Asia, central banks supported currencies through aggressive rate hikes, and several countries returned to the IMF for emergency programs because their existing hard-currency liabilities had become unsustainable. Sri Lanka's sovereign default in 2022, with currency depreciation alone contributing 27 percentage points to its debt accumulation that year and total debt reaching 126% of GDP, was the most visible consequence, but it was not isolated.[20] Ghana entered debt restructuring in late 2022. Zambia, which had already defaulted during Covid, struggled through three more years of restructuring negotiations. Pakistan oscillated between IMF programs throughout 2022 and 2023 as rupee depreciation pushed energy-sector circular debt beyond sustainable bounds.

20 IMF Working Paper WP/25/175, "Sri Lanka's Sovereign Debt Restructuring" (2025).

The Iran war is the most recent case and is still unfolding at the time of drafting this paper. The International Energy Agency characterized the disruption to global oil markets following the war as the largest in the industry's history, with around 10.1 million barrels per day of supply lost in March 2026.[21] Brent rose more than 55% above its pre-war level at its March peak, approaching USD 120 a barrel, before easing back toward USD 90 by late May. Disruption to the Strait of Hormuz, through which roughly a fifth of the world's oil flows, was the immediate trigger.

10.1m

barrels per day of oil supply lost.

Brent rose more than 55% above its pre-war level at its March peak. **↑55%**

For many economies, the transmission was rapid. Import bills widened, dollar demand surged, and currencies came under pressure across Asia, Africa, and parts of Latin America. The Indian rupee and Philippine peso fell to record lows, and the Indonesian rupiah weakened past its 1997-crisis depths despite repeated intervention. Reserves drained as central banks defended their currencies, India's falling by some USD 27 billion by early May, even as 30-year US Treasury yields rose above 5%, lifting the dollar and pulling capital out of emerging markets.[22]

Each shock landed on an architecture that had not yet recovered from the one before. The institutional response in each case has arrived in hard currency. The Afreximbank Gulf Crisis Response Programme made USD 10 billion in short-term foreign-exchange and liquidity support available to African and Caribbean economies in 2026, and the Asian Development Bank drew on its Countercyclical Support Facility to help member states hit by the same shock. Across all three crises, the countries that drew on emergency lending added new dollar liabilities to balance sheets already structurally short of dollars. The shocks did not introduce this fragility so much as expose how little had changed since the last one.

In each of these shocks, the currencies that had to be defended were the same ones needed to finance the energy transition and climate recovery, so the support that went to holding a currency steady was support that did not reach a clean energy project or a rebuilding effort. The advanced-economy architecture that absorbs these shocks, with deep currency markets, the structural capacity to issue in domestic currency, and central bank swap lines with the Federal Reserve and the European Central Bank, does not exist for the countries the climate finance system is meant to reach. That gap is structural, and it is the same one every shock has found.

21 International Energy Agency, on the post-war disruption to global oil markets (March 2026).
22 Catie Edmondson, "Asian Currencies Hit by Iran War," The New York Times (May 2026).

4

THE VALUE CHAIN

Managing FX risk across the value chain



Currency risk shows up differently across the energy transition value chain, and the instruments that absorb it in one segment do not necessarily translate to one another. Regardless of the segment, there are two basic ways to close a currency mismatch. The first is to finance the project in the currency it earns its revenues in, reducing FX risk. The second is to mitigate the FX exposure through instruments such as hedging, guarantees, or blended structures.

Not every borrower needs local currency, since a business with reliable hard-currency revenues may be well served by foreign-currency or mixed financing. The mismatch arises where debt is serviced in a currency the borrower does not earn, and in much of climate finance today that risk sits by default with whoever is least able to absorb it, often a borrower earning in local currency or a sovereign standing behind a guarantee. The instruments used to close the gap do different jobs. A credit guarantee protects a lender if the borrower fails to pay but leaves the mismatch in place. A currency hedge moves the exchange-rate risk onto a balance sheet built to hold it. A subsidy, such as donor support for the cost of a hedge, does not move risk but makes protection affordable.

"We know that energy access is the single biggest thing we can do to unlock human potential and economic development, which is why Mission 300 is focused on expanding energy access to 300 million people in Africa by 2030. Currency shocks are one of the things that can impede progress, by making power more expensive for utilities and the people they serve. The more financing is built to withstand those shocks, including in local currency, the more energy access can make a difference for people across the continent."



Andrew Herscowitz
CEO, Mission 300 Accelerator,
RF Catalytic Capital

The cases that follow trace how the mismatch, and the means of closing it, take a different form in each segment of the value chain →

The value chain

1 → 2 → 3 → 4

Utility-scale renewable power

Where the mismatch creates the biggest exposure.

BHUTAN POWER CORPORATION · P15

Commercial and industrial

The mismatch in its plainest form.

260 BRANDS · ZAMBIA P16

Intermediated lending

The mismatch on the balance sheet of the local lender.

AMEN BANK · TUNISIA P17

Distributed renewable energy access

Where the FX mismatch lands closest to the household.

D.LIGHT · UGANDA P19

1 Utility-scale renewable power

Utility-scale renewable power is where the mismatch creates the biggest exposure. Tenors can run 20+ years, deal sizes reach hundreds of millions, and sovereign guarantees put the state at risk when the currency depreciates. African utility-scale clean energy has not yet found a workable local-currency model at scale. The segment runs on hard-currency PPAs backed by sovereign guarantees, procurement frameworks that default to hard currency, and long-dated financing structures in illiquid markets with volatile currencies.

Workable local-currency utility-scale procurement exists, but only in a handful of developing markets. South Africa's REIPPPP, discussed above, has procured more than 6,000 MW across over 100 projects on rand-denominated power purchase agreements financed largely by domestic lenders.[23] India's competitive auctions are mostly INR-denominated, supported by a domestic capital market deep enough to absorb most of the financing. Brazil's Eco Invest auctions, launched in 2024, build a dedicated FX hedging line into the procurement structure itself, mobilizing BRL 75 billion across three rounds by November 2025. Kenya is the most recent attempt, lifting a moratorium on new PPAs in November 2025 and replacing it with a hybrid currency framework that allows agreements in shillings, foreign currency, or a mix of the two.[24] The framework is still largely untested.

Increasing the use of local currency and decreasing FX risk in emerging markets requires a combination of policy reform and instrument structuring. Bhutan combined both: a regulatory change that let domestic entities borrow from foreign lenders in local currency, and hedging that made the transaction work at long tenor.

CASE STUDY

Bhutan Power Corporation

In September 2025, TCX hedged a USD 8 million ngultrum-linked loan from IFC to Bhutan Power Corporation for grid modernization, at a tenor of nearly fifteen years. It was IFC's first infrastructure investment in Bhutan, the first offshore hedging transaction ever done in the ngultrum, and one of the longest-dated transactions in TCX's portfolio for the year. The deal followed Bhutan's May 2025 revision of its External Commercial Borrowing Guidelines, which for the first time let domestic entities borrow from foreign lenders in local currency, the regulatory shift that opened space for the hedge to work.

Country	Bhutan
Currency	BTN (ngultrum)
Size	USD 8m
Tenor	14.8 years
Lender	IFC
First	offshore BTN hedge

23 Kruger and Cassimon (2025), p. 12, citing O. Alao and W. Kruger, Driving Growth: Effective Renewable Energy Tendering in Africa, GET.Transform and SRMI (2024).
24 Kenya Ministry of Energy and Petroleum / EPRA, hybrid currency framework for new power purchase agreements (November 2025).

2 Commercial and industrial

Commercial and industrial (C&I) systems show the mismatch in its plainest form. A productive business often finances its solar system in hard currency while earning its revenue in local currency.

C&I is now the leading edge of distributed clean energy growth in Africa. Rooftop, commercial, and captive solar represented 44% of new capacity additions on the continent in 2025, and industry analysts estimate that the C&I segment accounts for most of the solar capacity that goes unrecorded in official figures. The credit behind it is unusually clean, with the offtaker being the productive business itself, paying for the power it consumes from its own operations, with no need for a state utility or sovereign guarantee to make the deal work. The economics are just as direct, because many African C&I sites rely on diesel generators to keep operations running through blackouts and grid unreliability, a hard-currency fuel cost the business is already paying at several times the price of grid power, and solar plus storage displaces that cost at a structurally lower price. IRENA finds that solar PV was on average 41% cheaper than the lowest-cost fossil fuel alternatives in 2024.[25]

But the financing architecture has not yet caught up. The Global Solar Council notes that existing capital is poorly suited to distributed solar, which requires smaller ticket sizes, shorter tenors, and local-currency financing.[26] C&I developers have historically managed FX exposure by targeting projects with USD-generating offtakers and indexing PPAs to the dollar. Where the offtaker earns in local currency, the developer needs long-tenor local-currency debt to match, and the 260 Brands transaction in Zambia shows how that gap can be closed.

CASE STUDY

260 Brands (Seba Foods)

In October 2025, the Africa Agriculture and Trade Investment Fund lent USD 10 million to 260 Brands, a Zambian agri-processor, to expand storage and install solar power in place of diesel. TCX converted USD 1.5 million of the investment into Zambian kwacha through a cross-currency swap with a tenor of nearly eight years, supported by BMUKN. The hedge matched part of the company's debt service to its local-currency revenue base over the life of the infrastructure it was paying for, protecting the firm's resilience and the affordability of its products downstream.

Country	Zambia
Currency	ZMW
Size	USD 1.5m of a USD 10m loan
Tenor	8+ years
Lender	AATIF
Support	BMUKN

25 IRENA, Renewable Power Generation Costs in 2024.
26 Global Solar Council, on financing suited to distributed solar.

3 Intermediated lending

Intermediated lending shows the mismatch on the balance sheet of the local lender. A bank or non-bank financial institution takes a hard-currency credit line from a development finance institution but on-lends to its borrowers in the local currency they earn revenues in.

Local lenders are the channel most clean-energy SME and consumer finance has to flow through to reach the real economy in developing markets. They know the borrowers, hold the credit relationships, and operate under the regulatory licenses needed to extend retail and SME credit at scale. They also hold the local-currency funding base (deposits, domestic bonds, pension flows) that international DFIs do not.

But the long-term funding that reaches them is often in hard currency. KCB Bank, the largest bank in Kenya, illustrates the pattern. Research by the Centre for Development Finance Studies finds that almost all of KCB's long-term debt comes from MDBs and DFIs in dollars, and nearly 90% of its long-term lending to customers is in dollars too.[27] Local-currency deposits fund short-tenor lending; long-tenor lending depends on the wholesale funding the bank receives. Where that funding arrives in dollars, the long-tenor lending follows.

Closing that mismatch means indexing the hard-currency credit line into local currency so the lender can on-lend at terms a local borrower can carry. The AMEN Bank Tunisia case below shows how this works in practice, alongside earlier transactions including TBC Bank Uzbekistan and Finanzauto Colombia.

CASE STUDY

AMEN Bank

In December 2025, TCX provided its first hedge under a EUR 20 million blended facility funded by the European Union and intermediated through the EBRD to support green SME lending by Tunisian banks. The first transaction backed a EUR 10 million EBRD loan to AMEN Bank, on-lent to enterprises for renewable energy, energy efficiency, water efficiency, and sustainable land management. A boundary-based guarantee compensates TCX for currency losses within pre-calculated ranges, with the structure targeting 5x leverage, up to EUR 100 million of hedging on the EUR 20 million guarantee.

بنك الأمان
AMEN BANK

Country	Tunisia
Currency	TND
Size	EUR 10m of EUR 20m
Use	Green SME on-lending
Facility	EU–EBRD
Target	5x leverage

27 Centre for Development Finance Studies, analysis of KCB Bank's funding and lending currency composition.

4 Distributed renewable energy access

Distributed energy access is where clean energy reaches the customers grid extension cannot, and where the FX mismatch lands closest to the household. The mismatch shows up in two distinct forms inside the segment, and the architecture has reached them differently.

Pay-as-you-go (PAYGo) solar and household systems

Pay-as-you-go solar combines solar hardware with mobile-money-enabled installment financing, turning the upfront price of a solar home system into small, regular payments that fit household budgets. Providers extend credit to customers in local currency over multi-year terms, while much of their working capital comes from international investors in dollars. When local currencies weaken faster than expected, this mismatch raises the real cost of that capital. Companies build some expected currency movement into their pricing, but customer payments are typically fixed at signing, so sharper moves are absorbed by the company and its funders. In recent years, currency volatility has become one of the most significant financial pressures on the sector. Better tools to manage it would help companies keep solar affordable for new customers and attract the long-term investment needed to reach universal energy access.

PAYGo has become a primary channel for electricity access in Sub-Saharan Africa. Off-grid solar now accounts for more than half of all new electricity connections in the region, and GOGLA (the global off-grid solar association) reports its affiliates currently reach more than 148 million people with improved energy access.[28]

Off-grid solar financing has also scaled meaningfully in the past few years. Sun King closed a USD 156 million Kenyan-shilling-denominated securitization in July 2025 following a USD 130 million securitization in 2023.[29] Securitization structures aggregate local-currency receivables into pools large enough to attract international capital, and they create the natural point at which a hedge can convert the dollar capital into local currency. GOGLA's 2025 investment data show local-currency deals reaching a record share of off-grid solar investment, though concentrated among a few large operators and, as GOGLA notes, volatile from year to year.[30]

> "Off-grid solar has shown it is an investable sector, with receivables now rated and bought by institutional investors. Local-currency finance makes that investment more sustainable, because it matches how customers pay. Companies can stay viable through a currency shock, and the cost need not end up with the households they serve."



Sarah Malm
Executive Director, GOGLA

TCX has been active in this sector, hedging the d.light Uganda securitization in 2025, alongside earlier transactions for Yellow Malawi and Easy Solar Sierra Leone.

28 Energy Sector Management Assistance Program (ESMAP), GOGLA, Dalberg. 2026. Off-Grid Solar Market Trends Report, Washington, DC: The World Bank. License: Creative Commons Attribution CC BY 3.0 IGO.
29 Sun King, "$156M Sun King Securitisation to Deliver Solar for Over a Million Kenyans," press release (2025).
30 GOGLA, "The Sector Is Maturing. Capital Is Concentrating." GOGLA Investment Data 2025 report.

Mini-grids

Mini-grids are a substantial part of how Sub-Saharan Africa's access gap closes. They account for 17% of planned connections under the Mission 300 compacts signed by 29 governments (about 81 million people).[31] They reach clusters too large for a single solar home system and beyond where the central grid can economically reach.

Scaling and financing mini-grids has proven challenging for a number of reasons. For instance, rural demand and ability to pay are low, so developers build smaller systems at high per-unit cost, roughly USD 6,800 per kWp against a global benchmark near USD 3,000. Tariffs are often capped near subsidized grid rates despite far higher costs, and the national grid may expand into a developer's territory, undercutting projects already built.

In Sub-Saharan Africa, the sector has typically leaned heavily on grants and results-based financing to bridge the viability gap. The need for concessional financing and blended finance is recognized as a gap, with a 2024 report showing that more than USD 9 billion has been committed towards concessional capital.[32]

The financing needed for mini-grids is long-term and in local currency, to match a 20-year asset earning local revenue. Local banks lend in local currency but not for long enough, and the international money with longer tenors is denominated in hard currency, so developers end up owing in dollars while earning in local currency. Closing that gap means getting long-term local currency to developers, either by lending it directly or by transferring the risk away from the borrower.

CASE STUDY

d.light

d.light is a pay-as-you-go solar provider that has reached more than 175 million people. Its Ugandan operations are funded through a securitization in which shilling-denominated instalment receivables are sold to African Frontier Capital, an impact asset manager that funds the structure in US dollars. Since 2020, d.light has closed five Brighter Life securitization facilities with a combined purchasing capacity of more than USD 842 million. In 2025, TCX hedged the shilling-dollar exposure at roughly USD 2.5 million equivalent, done through MFX, which gives smaller impact funds access to TCX, with the BMUKN SDG7 facility subsidizing the cost of the hedge. Four instruments each take one layer. The securitization gives d.light working capital, African Frontier Capital prices the credit risk, TCX takes the currency risk, and BMUKN keeps the hedge affordable at the household level.

Country	Uganda
Currency	UGX
Size	~USD 2.5m
Route	via MFX
Support	BMUKN

31 Africa Minigrid Developers Association, Mission 300 industry position paper (2026). The 17% / 81 million figure reflects the 20 of 29 compact signatories that disclosed a technology mix.
32 Africa Minigrid Developers Association, Benchmarking Africa's Minigrids 2024 (2025); concessional commitment figure per Power for All (2024).

FEATURE · TCX BLENDED FACILITIES

Closing the affordability gap to hedge across the energy value chain

5
blended finance facilities run by TCX

USD 2.5bn
local-currency-indexed financing expected to be mobilized

EUR 235m
in donor commitments

12:1
leverage on early BMUKN SDG7 facility trades

The same currency mismatch runs the length of the value chain, from utility-scale power down to the mini-grids serving a few hundred connections. Financing arrives in hard currency, revenue is earned in local currency, and the borrower is left carrying the difference. Hedging exists to move that risk off the borrower, but its cost reflects the gap between local and hard-currency interest rates, a market-reflective price that in frontier markets is often greater than what borrowers are willing to pay.

TCX uses blended finance facilities to reduce this affordability barrier. By using donor capital to absorb part of the hedging cost, it brings the price down to a level borrowers can sustain without distorting the underlying market price of risk, letting a developer match its debt to its local-currency revenue. TCX runs five such facilities, with roughly EUR 235 million in donor commitments expected to mobilize around USD 2.5 billion in local-currency-indexed financing. Some of these facilities target energy and climate directly. The BMUKN SDG7 facility subsidizes hedging for renewables, solar home systems, and clean cooking, reaching 12:1 leverage on its early trades, and has supported 11 trades in seven currencies to date, and the EU–EBRD facility in Tunisia channels affordable local-currency lending through commercial banks to green SMEs. The EUR 170 million EU Market Creation Facility carries that capacity at scale across priority sectors, including climate and energy.

Demand for these facilities has consistently exceeded the capacity available.

Blended finance for local currency solutions (2026).

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ADVANCING THE ARCHITECTURE

Advancing the local currency architecture

The tools to manage currency risk within climate finance exist, but must continue to grow in order to keep pace with the demand and ambition of the global climate agenda. At the same time, progress to develop local capital markets and increase domestic liquidity is the key to unlocking local currency in the most sustainable way. Both must operate in parallel to advance the architecture of local currency financing. The following recommendations are grouped by who needs to act: lenders and the designers of procurement and financing frameworks, sovereigns and utilities, and donors and policymakers.

Seven recommendations at a glance

Lenders and framework designers

1. Building borrower choice into lending.
2. Denominating PPAs for renewable energy projects in local currency.
3. Designing global frameworks for local currency from the outset.

Sovereigns and utilities

4. Strengthening sovereign balance sheets to withstand climate shocks.
5. Matching coverage to vulnerability, not country classification.

Donors and policymakers

6. Scaling blended finance for hedging instruments.
7. Building the onshore markets that are the destination.

Lenders and framework designers

1 Building borrower choice into lending

TCX's ACT Principles ask development banks to alert borrowers to the currency risk in a hard-currency loan, compare it openly with a local-currency alternative, and let the borrower choose. The Currency Conversion Clause gives that choice contractual form, in line with the Sevilla Commitment's call in July 2025 for official creditors to scale up local-currency lending. Shareholders can make it routine by directing development bank boards to offer and document a local-currency option for every eligible loan.

2 Denominating PPAs for renewable energy projects in local currency

The currency of a power purchase agreement is set when the project is designed, and it can be set in local currency from the start, as Kenya's November 2025 hybrid-currency framework and Brazil's Eco Invest auctions show in different ways. The approach works best where the offtaker is creditworthy and local-currency debt or a hedge is available at the project's tenor. Tariff denomination, indexation and the currency of the debt also need to be designed together, since a local-currency tariff financed with dollar debt simply moves the mismatch from the offtaker to the developer.

3 Designing global frameworks for local currency from the outset

Country platforms from the Just Energy Transition Partnerships to Mission 300 set the financing template for a generation of energy investment, and their currency is a design choice made early. South Africa's JETP, structured largely in hard-currency loans, stalled when the utility could not take on more debt. The partners who design these platforms, including JETP donor groups and the multilateral development banks leading Mission 300, can make local currency the default, offered and costed from the outset, while leaving room for other structures.

Sovereigns and utilities

4 Strengthening sovereign balance sheets to withstand climate shocks

Active currency risk management stabilizes debt service and protects the fiscal space needed when a disaster lands. Moody's cited currency risk reduction when it upgraded Paraguay to investment grade in 2024, and the IMF finds that emerging markets with deeper local-currency debt weather global shocks better. Finance ministries, debt management offices and state-owned utilities can treat currency composition as a core part of debt strategy.

5 Matching coverage to vulnerability, not country classification

As Small Island Developing States graduate to middle- and high-income status, they lose access to concessional finance even though their climate exposure remains among the highest in the world. ODA-eligible SIDS received roughly USD 1.9 billion a year in adaptation finance in 2021–2022, against USD 181 million for those no longer eligible. The MDBs and DFIs that set eligibility for concessional windows and blended facilities, and their shareholders, can extend currency-risk coverage on the basis of exposure, an approach reflected in the UN's Multidimensional Vulnerability Index, adopted in 2024.

Donors and policymakers

6 Scaling blended finance for hedging instruments

Blended finance, where donor capital absorbs part of the hedging cost, makes local-currency protection affordable for harder-to-finance climate projects, at longer tenors and in frontier markets. TCX's facilities have proven the model, and the task now is to make it a standing part of how climate finance is structured. Recent transaction data suggest the first deals in a market matter most, since an investor's spreads in a country fall by more than 200 basis points by its fifth transaction there, which makes first transactions a natural target for concessional support.[33]

7 Building the onshore markets that are the destination

The instruments above work largely offshore, and the durable answer is to move delivery onshore, into domestic markets deep enough to fund the transition in local currency. African pension funds hold large pools of capital, very little of which reaches domestic infrastructure for lack of the instruments to channel it there. In practice this can start with offshore hedges and guarantees that let domestic lenders co-finance, moving over time to pooled projects and domestic refinancing as markets deepen.

HOW TCX IS RESPONDING

TCX's Multi-Year Strategy 2026–2030 sets out how it is responding on several of these fronts.

In June 2026, TCX's shareholders approved an expansion of its mandate beyond the OECD DAC list, capped at 10% of the portfolio to preserve its development focus, so that climate-exposed economies in the Caribbean and other small island developing states can access currency protection they would otherwise be denied on income grounds.

Click to read →

33 Sandler, Schrag and Hepburn (2026).

7

THE WAY FORWARD

Final thoughts

The mismatch is the quiet tax on energy and climate investments.

Each shock of the past six years has exposed the same vulnerability, faced by countries that borrow in currencies mismatched from the revenues they earn. The Iran war made it visible again, as disrupted oil supply and the threat to the Strait of Hormuz drove up import bills, dollar demand, and currency pressure across the same low- and middle-income countries the climate finance system is meant to serve, straining both the clean energy projects they need to build and the recoveries they need to fund.

The money pledged at COP29 and mapped in the Baku to Belém Roadmap is real. But its value depends on the currency it arrives in. A dollar of climate finance lent into a currency a country does not earn is worth less than its face value, and worth least exactly when a shock hits and it is needed most.

The instruments to change this already exist. Currency risk can be priced, hedged, and moved off the borrower today, and the deeper task of building local capital markets able to finance in their own currency is already underway. The work ahead is to make local currency the rule, rather than the exception. Getting this right is essential to whether climate finance delivers what it promises.

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