FIELD BRIEFING

Capex evidence gate, practitioner playbook

What evidence must exist before each tranche of capital is released, when infrastructure reliability rather than demand is the binding variable.

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Decision mandate

This briefing serves one decision, taken repeatedly rather than once. A board is asked to authorise a fixed asset in the WAEMU-euro corridor: a light-manufacturing line, a cold-chain platform, a packing or blending facility, somewhere on the Abidjan, Dakar, Lome or Ouagadougou axis. The accountable decision-maker is the board, acting through its chair, with the chief executive proposing and the chief financial officer holding the release. The decision is not whether to invest. It is whether to release the next tranche of capital, and on what evidence.

The horizon is the construction and ramp-up window, typically eighteen to thirty months from site control to steady-state operation. The value at stake is the whole of the committed capital plus the ramp-up working capital, of which the asset-specific portion, the part that recovers almost nothing on a distressed exit, is usually the largest single tranche. The reader should leave able to decide differently in one specific way: to stop treating the capital authorisation as a single vote on a discounted cash flow, and to convert it into a sequence of tranche releases, each unlocked by a named evidence artifact measured over a named window against a numeric threshold, with a named owner who can refuse.

The alternatives, stated plainly, with their reversibility. Authorising the full amount at financial close is the fastest and the least reversible: once process equipment is ordered and installed, the capital is asset-specific and the board's remaining options are operational, not financial. Releasing in tranches against evidence is slower by the length of the measurement windows, and fully reversible up to the equipment gate. Deferring the whole decision preserves optionality and costs the option premium on the site and the order book. Reversibility, not caution, is why the sequence below concentrates evidence weight immediately before the asset-specific tranche rather than spreading it evenly.

This is a field briefing, not an investment appraisal manual. It assumes a reader who already knows how to build a model and who needs to know which numbers in it are load-bearing.

> EVIDENCE
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> The gap between capital committed to infrastructure and infrastructure output actually delivered is large, measurable and consequential. The IMF's 2015 policy paper *Making Public Investment More Efficient* finds average inefficiencies in public investment processes of around 30 percent, comparing the value of public capital against infrastructure coverage and quality delivered. On the same work, a 1 percent of GDP increase in public investment raises output by about 0.3 percentage points of GDP in economies in the bottom efficiency quartile against about 0.6 percentage points in the top quartile, and strengthening public investment management institutions could close about two thirds of the gap.
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> Source: International Monetary Fund, Making Public Investment More Efficient, policy paper, June 2015, with the accompanying IMF Survey note. Geography: cross-country global sample. Method: efficiency frontier constructed by comparing public capital stock against physical infrastructure coverage and quality indicators. Grade SEG-5. Caveat: this concerns public investment, not private capital expenditure. It is used here by explicit analogy, to establish that committed capital and delivered infrastructure output diverge systematically and that the divergence is governable. It is not evidence about any private sponsor's project, and the 2015 vintage has not been re-verified against a later revision.

The conventional assumption

The conventional assumption, held in most investment committees and reinforced by most finance training, is that capital discipline is a hurdle-rate question. On this view the board's job is to set a required return that reflects country risk, sector risk and the cost of capital, then to check whether the project clears it. Rigour is expressed as a higher discount rate, a country risk premium, a sensitivity table that flexes the rate by two hundred basis points in each direction. The pack that arrives at the board is thick on the rate and thin on the plant.

This briefing takes the opposite position, and states it as the house position, an interpretation from operating practice rather than a measured finding (grade SEG-1, marked as such deliberately): in this corridor the discount rate is the least informative number in the pack. It prices the return. The risk that destroys the return is not that the return came in lower than modelled; it is that the asset could not run at the utilisation the model assumed. Demand risk is usually the risk the sponsor has actually studied, at length, with a market survey and a letter of intent. The risks that empty the plant are power continuity, logistics predictability, customs and port dwell, counterparty payment behaviour and permit sequencing. None of them is a rate. Each of them is an observable that can be measured before the money moves, and each of them, if it is going to fail, fails in the first two years of operation, which is exactly when the capital is least recoverable.

The corrective is procedural rather than analytical. Split the authorisation into tranches. Attach to each tranche a named artifact, a named measurement window and a numeric threshold. Give one person the authority to refuse. Then let the hurdle rate be whatever the committee wants it to be, because by then it will be the smallest dial on the board.

The corridor structural difference

Five structural facts make the corridor different from the emerging-market template that most investment committees carry in their heads, and each changes what evidence a capital release requires.

First, money is not the scarce input and demand is not the visible constraint. The BCEAO's main policy rate has stood at 3.00 percent since 16 March 2026 and was held on 10 June 2026; union real GDP grew 6.5 percent in 2025 with 6.1 percent expected for 2026. A committee that spends its meeting on the discount rate is optimising the abundant variable. The scarce inputs are uninterrupted power, a predictable lane and a counterparty that pays. That inversion is the single most important thing to carry out of this section.

Second, connection is not supply. Access to electricity stood at 72.4 percent of the population in Cote d'Ivoire and 74.2 percent in Senegal for reference year 2023 on the SDG 7.1.1 dataset. Those numbers describe reach, not reliability, and a sponsor who reads them as comfort has read the wrong indicator. What matters to a plant is the interruption profile on its own feeder during its own scheduled operating hours, and that is a different measurement made with a different instrument. Cote d'Ivoire's regulator, ANARE-CI, created by decree no. 2016-785 of 12 October 2016, defines SAIDI and SAIFI as regulated service-quality indices subject to ceilings and publishes an annual activity report by 30 June each year. The practitioner move is to ask the regulator and the utility for the published index for the specific feeder, and to treat a national average offered in its place as a refusal.

Third, the reliability distribution has a tail, and the tail is the decision variable. In the World Bank Enterprise Survey 2023 for Cote d'Ivoire, the variable recording the number of power outages in a typical month has 547 valid responses. The most frequent answers are two outages (109 establishments, 19.9 percent),

three (89, 16.3 percent), five (70, 12.8 percent) and one (49, 9.0 percent); 32 establishments (5.9 percent) answered do-not-know. Those five categories cover 349 of 547 responses, so about 36 percent of respondents sit outside them, and the recorded maximum response is 420. A modal firm reporting two or three outages a month tells you almost nothing about the firm you are about to become, because the same population contains firms reporting an order of magnitude more. A capital release built on a mean is built on the wrong statistic.

Fourth, the corridor's answer to unreliable power is a cost, not an outage, and the cost is large. The US Energy Information Administration's *International Energy Outlook 2020*, drawing on World Bank Enterprise Survey responses for sub-Saharan Africa, reports that 51 percent of surveyed manufacturers, retailers and service firms use self-generation, most of it diesel, to meet 27 percent of their electricity demand, and that backup generation supplied nearly 14 percent of electricity use in the commercial and industrial sectors. For a cold-chain or process asset this is decisive: the plant does not stop, it runs on expensive fuel, and the loss appears in unit cost rather than in volume. A board that has modelled outages as lost hours has modelled the wrong failure mode.

Fifth, the counterparty's published position is itself an evidence question. In August 2025 the IMF recorded that, after a comprehensive reconciliation exercise conducted by an external audit firm and following the Cour des comptes report of 12 February 2025, the Senegalese authorities revised central government debt from 74.4 percent to 111.0 percent of GDP at end-2023, with revised statistics showing 118.8 percent at end-2024. Read narrowly, that is a sovereign matter. Read as an operator reads it, it is a warning about the class of counterparty whose payment behaviour underwrites a corridor asset's ramp-up: published financial positions in this corridor can move by tens of points of GDP on reconciliation, and a payment assumption resting on a published position rather than on observed receipts is an assumption resting on nothing.

The executive consequence of the five together: in this corridor the pack is usually strong where the risk is small and silent where the risk is large. Capital should therefore be released against measurements of the silent variables, in tranches, with the heaviest evidence burden placed immediately before the capital becomes asset-specific.

Economics and uncertainty

The core quantitative content of this briefing is one identity and one comparison.

The compounding availability identity. An asset does not run unless every enabling condition holds at once. Where an asset requires n independent enabling conditions, each available a fraction p of scheduled operating time, achievable utilisation is bounded above by the product of the fractions. For four conditions, the arithmetic is unforgiving: at 97 percent each, 0.97 to the fourth is 88.5 percent; at 95 percent each, 81.5 percent; at 92 percent, 71.6 percent; at 90 percent, 65.6 percent; at 85 percent, 52.2 percent. These are arithmetic identities on the stated inputs, not estimates.

AVAILABILITY PER CONDITION	ACHIEVABLE UTILISATION WITH FOUR CONDITIONS
97 percent	88.5 percent
95 percent	81.5 percent
92 percent	71.6 percent
90 percent	65.6 percent

AVAILABILITY PER CONDITION	ACHIEVABLE UTILISATION WITH FOUR CONDITIONS
85 percent	52.2 percent

The identity explains a common and expensive board experience. Each function reports its own condition as acceptable. Power says ninety-five percent, logistics says ninety-five percent, customs says ninety-five percent, inputs say ninety-five percent. Every one of those answers passes on its own. Together they produce an asset that runs four days in five, against a model that assumed it would run six days in seven. Nobody lied and nobody was wrong; the board simply never multiplied.

The comparison that changes the meeting. In the worked scenario below, holding everything else constant, moving the discount rate a full two hundred basis points changes net present value by roughly 325 million CFA francs. Moving from the gate-threshold infrastructure case to the case one notch below the thresholds changes it by roughly 1 033 million, more than three times as much. Moving to the weak case changes it by roughly 2 261 million, about seven times as much. The discount rate is a real number and it is worth getting approximately right. It is not where the decision lives.

Counter-case. The house position would be wrong, or badly weakened, in three identifiable conditions. One: an asset with internalised infrastructure. A mine or an industrial zone tenant with captive generation, private haulage and a dedicated berth has bought its availability inside the capital cost; the external variables collapse into a construction and commissioning problem and the gate reduces to a conventional cost-and-schedule gate. Two: an asset where demand genuinely is the dominant variable. A first-mover consumer product entering a category with no observed demand cannot be rescued by any quantity of reliability evidence, and evidence weight should sit on the demand test instead. Three: a structure in which availability risk has been transferred and priced, through a take-or-pay offtake with an availability-independent payment, or a guarantee instrument carried by a development finance institution. The evidence must still exist, because the guarantor will require it, but the board's own release decision is a different decision, and this briefing does not describe it.

Highest-leverage unknown. The correlation between the enabling conditions. The identity above multiplies them, which assumes independence. In practice a fuel supply disruption degrades grid supply, backup generation and road haulage at the same time; a port stoppage degrades inbound inputs and outbound offtake together. Positive correlation makes realised availability worse than the product, sometimes much worse. No published corridor dataset establishing that correlation was found in the preparation of this briefing, and the reader should treat the product form as an optimistic bound rather than a central case until the sponsor's own logs give a joint distribution. That limitation is stated here rather than buried, because it is the model's principal weakness.

Falsification condition. The central recommendation is testable and can be shown to be unnecessary. If, on ninety days of the sponsor's own half-hourly metered data at the specific site, measured power availability during scheduled operating hours is at or above 99.0 percent, the door-to-door lane P90 is at or below 1.3 times the P50, and the counterparty portfolio shows no observed slippage beyond contracted payment terms, then infrastructure is not the dominant variable for that asset. In that case the demand study is the binding document, the tranche architecture adds cost without changing any decision, and the discount rate is worth arguing about after all. Ninety days and one data logger settle it.

What this briefing is not valid for is set out in the failure-modes movement below and must travel with any internal circulation of the document.

EVIDENCE

In the World Bank Enterprise Survey 2023 for Cote d'Ivoire, the variable recording the number of power outages in a typical month in the last fiscal year has 547 valid and 102 invalid responses; within the 547, the most frequent answers are two outages (109 establishments, 19.9 percent), three (89, 16.3 percent), five (70, 12.8 percent) and one (49, 9.0 percent), with 32 (5.9 percent) answering do-not-know and a recorded maximum of 420.

Source: World Bank Group, Enterprise Surveys, Cote d'Ivoire 2023, Microdata Library catalog 6439, variable c7. Geography: Cote d'Ivoire, national establishment sample. Method: establishment survey, respondent self-report. Grade SEG-4. Caveat: these are unweighted raw response counts as displayed in the microdata catalogue, not the weighted country indicator, which could not be verified; the do-not-know code is counted inside the 547, so the effective numeric base is 515. No mean or median is asserted, deliberately: the briefing uses the shape of the distribution, not its centre.

EVIDENCE

In sub-Saharan Africa, 51 percent of surveyed manufacturers, retailers and service firms use self-generation, most of it costly diesel generation, to meet 27 percent of their electricity demand, because of the frequency and duration of outages; on that basis backup generation supplied nearly 14 percent of electricity use in the commercial and industrial sectors.

Source: U.S. Energy Information Administration, International Energy Outlook 2020, Issue in Focus: Africa, drawing on World Bank Enterprise Survey data. Geography: sub-Saharan Africa, pooled. Grade SEG-4. Caveat: a 2020-vintage pooled regional figure, not corridor-specific and not current. It supports the structural point that self-generation is a normal operating cost in the region; it supports no statement about any specific site, feeder or country, and none is made.

EVIDENCE

Following a comprehensive debt reconciliation exercise conducted by an external audit firm, and after the Cour des comptes report published on 12 February 2025, the Senegalese authorities revised the stock of central government debt from 74.4 percent to 111.0 percent of GDP at end-2023; revised statistics show 118.8 percent at end-2024.

Source: International Monetary Fund, Press Release No. 25/282, IMF Staff Concludes Visit to Senegal, 26 August 2025. Geography: Senegal. Grade SEG-5. Caveat: cited solely to establish that a counterparty's published financial position is itself an evidence question capable of moving by tens of points of GDP on reconciliation. It is not a solvency opinion, not a country rating and not a statement about any specific entity's payment behaviour. Position as at the August 2025 staff statement.

Instruments: the capital release file

The instrument for this problem is the capital release file: a controlled folder, held by the chief financial officer, in which each tranche has its own tab containing the artifacts that unlock it, the dates on which they were measured, the measured values and the signature of the person who accepted them. The practice of releasing capital tranche by tranche against that file is what this briefing calls, descriptively, a capex evidence gate. The phrase names a practice, not a product; its governance status is recorded in the limits section.

The file's tranche schedule is recorded on the firm's Decision Authorization Canvas, an F2 framework, which is to say designed and under validation rather than field-proven, and disclosed as such here.

Five evidence classes populate the file. Each is defined by its artifact, not by its conclusion, because the recurring control failure in corridor capital appraisal is substitution: a letter accepted in place of a log, a mean accepted in place of a tail. That is a house position, an interpretation from practice rather than a measurement (grade SEG-1).

1. **Power continuity.** Artifact: ninety consecutive days of half-hourly metered supply logged at the site meter or, before connection, at the nearest equivalent feeder, plus the signed connection agreement stating a firm capacity in kVA, plus a costed backup design stating autonomy in hours at full load, plus a measured self-generation cost per kilowatt-hour taken from a real fuel quotation with delivery terms. Not a utility letter. Not a neighbour's opinion.
2. **Logistics predictability.** Artifact: forty consecutive timestamped movements on the exact inbound and outbound lane the asset will use, port gate to site and site to market, reported as P50 and P90 door-to-door, never as an average.
3. **Customs and port dwell.** Artifact: thirty actual clearances on the same HS codes and the same customs regime, taken from the firm's own or its broker's records, reported as declaration-to-release P50 and P90, plus a written answer to the question of whether the administration publishes an average release time for the relevant office.
4. **Counterparty payment behaviour.** Artifact: six months of receipts reconciled against invoices for counterparties representing at least 60 percent of contracted first-year revenue, reported as weighted observed days-to-cash against contracted terms; for public counterparties, the budget line and the arrears record in place of a receipts history.
5. **Permit sequencing.** Artifact: a dated permit register listing every permit on the critical path with its issuing authority, its statutory clock, its current status and its dependency order, with a status field that admits only *issued*, *filed and acknowledged in writing* or *not held*. There is no fourth status, and in particular no status for verbal assurance.

EVIDENCE CLASS	ARTIFACT OWNER	MEASUREMENT WINDOW	REFRESH
Power continuity	Project director, verified by CFO	90 consecutive days	Continuous once metered; re-cut at every gate
Logistics predictability	Supply chain lead	40 consecutive movements	Rolling; re-cut at every gate
Customs and port dwell	Supply chain lead with broker	30 consecutive clearances	Rolling; re-cut at every gate

EVIDENCE CLASS	ARTIFACT OWNER	MEASUREMENT WINDOW	REFRESH
Counterparty payment behaviour	CFO (credit function)	6 months of receipts	Monthly
Permit sequencing	General counsel	Continuous register	Weekly during construction

The tranche schedule is the operative instrument. Shares are of total capital; the illustrative amounts are those of the worked scenario.

TRANCHE	SHARE AND ILLUSTRATIVE AMOUNT	WHAT IT FUNDS	EVIDENCE REQUIRED TO UNLOCK	NUMERIC THRESHOLD	OWNER	TIMING	ESC IF M
A	8 percent, XOF 336 million	Site control, permits, studies, connection application	Permit register; registered title or lease; connection application filed with a written capacity response	All critical-path permits issued or filed and acknowledged in writing; zero permits on verbal assurance; connection response states a firm capacity in kVA	Project director, countersigned by general counsel	Before any non-refundable payment above 1 percent of total capital	Any verb assu goes boar tranc not r the s optio than
B	30 percent, XOF 1 260 million	Civil works, shell, utility connection	90 days of half-hourly metered supply; signed connection agreement; costed backup design; measured self-generation cost per kWh	Measured availability at or above 97.0 percent of scheduled operating hours; no single interruption above 4 hours; backup autonomy at or above 8 hours at full load	CFO with the project director	Measurement window opens at site control and closes before the civil works contract is signed	Avai betw and perc relea the t with auto raise hour mod belo perc tranc refus site

TRANCHE	SHARE AND ILLUSTRATIVE AMOUNT	WHAT IT FUNDS	EVIDENCE REQUIRED TO UNLOCK	NUMERIC THRESHOLD	OWNER	TIMING	ESC IF M
C	40 percent, XOF 1 680 million	Process equipment, cold rooms, installation	40 lane movements with P50 and P90; 30 customs clearances with P50 and P90; six months of receipts against invoices covering at least 60 percent of contracted first-year revenue	Lane P90 at or below 2.0 times P50; customs P90 declaration-to-release at or below 7 calendar days with no consignment above 21 days; weighted days-to-cash at or below contracted terms plus 30 days; no single counterparty above 25 percent of first-year revenue without a payment instrument	CEO with CFO; board investment committee ratifies	Not earlier than 60 days before the equipment order; no artifact older than 90 days at the decision	Any miss the t the f with re-pl optio defa is to orde redu spec

TRANCHE	SHARE AND ILLUSTRATIVE AMOUNT	WHAT IT FUNDS	EVIDENCE REQUIRED TO UNLOCK	NUMERIC THRESHOLD	OWNER	TIMING	ESC IF M
D	22 percent, XOF 924 million	Ramp-up working capital	30 days of live operation at or above 60 percent of nameplate with all instruments running; stock-loss log; first receipts from at least three counterparties	30-day measured availability at or above 97.0 percent; zero stock-loss events exceeding backup autonomy; first cash received from at least three counterparties within contracted terms plus 15 days	CFO	At 30 days from commissioning	Belo thres work relea mon a rol mea inste one

The design principle behind the schedule is that gate severity tracks asset specificity, not tranche size. Tranche A is small and largely recoverable; land and options resell. Tranche B builds a shell with alternative uses. Tranche C buys cold rooms, refrigeration plant and installed process equipment, which on a distressed exit recover very little. That is why the heaviest evidence burden and the highest decision authority sit at gate C, even though gate B is the one that consumes the longest calendar. A board that puts its toughest questions at gate B and waves gate C through has reversed the instrument.

Decision sequence

Five actions, each with owner, threshold, timing and escalation. They are sequential, and the scenario shows why the order matters.

#	ACTION	OWNER	TRIGGER / THRESHOLD	TIMING	EVIDENCE PRODUCED	ESCALATION
1	Convert the single capital authorisation into four tranche authorisations with named artifacts	CFO, approved by the board	Any capital authorisation above 10 percent of balance-sheet total, or any asset whose payback exceeds 4 years	At the next investment committee, before financial close	Board minute recording the tranche schedule and thresholds	A request to authorise in one vote goes to the board chair as a governance item, not a scheduling item
2	Install a data logger and open the 90-day power measurement before the civil works contract	Project director, verified by CFO	Measurement must be half-hourly, at the site meter or nearest equivalent feeder, over 90 consecutive days	Opens at site control; closes before the civil works contract signature	Metered availability series with interruption durations	Any proposal to sign civil works before the window closes is decided by the board, with the value at risk stated in writing
3	Measure the lane, not the average: 40 movements, reported as P90 and P50	Supply chain lead	Lane P90 at or below 2.0 times P50 on door-to-door elapsed time	Complete before the Tranche C decision; refreshed within 90 days of it	Movement log with both percentiles and the ratio	Ratio above 2.0: buffer stock and cold storage sized to the P90, costed, and the model re-run before the order
4	Price counterparty payment behaviour and cap concentration	CFO (credit function)	Weighted days-to-cash above contracted terms plus 30 days, or any counterparty above 25 percent of first-year revenue without a payment instrument	Six-month receipts file complete before Tranche C; monthly thereafter	Receipts-against-invoices reconciliation with weighted days-to-cash	Breach of either limit: the tranche is deferred, or the exposure is covered by a letter of credit or equivalent before release
5	Replace the discount-rate sensitivity table in the board pack with a utilisation sensitivity table	CFO	Any board pack presenting a rate sensitivity without an availability sensitivity	From the next pack	Board pack carrying the availability grid and the compounded utilisation	Pack returned to the sponsor unread; the meeting does not proceed on it

The sequence exists because action 3 is meaningless without action 1, which creates the gate that the measurement serves, and because action 2 has a ninety-day clock that must be started before it is needed rather than when it is needed. A sponsor who begins at action 5 produces a prettier pack around the same unmeasured assumptions.

Worked scenario: an illustrative Abidjan cold-chain facility

All figures in this scenario are ILLUSTRATIVE and synthetic. They describe no client and no real asset. They are chosen to be representative of a mid-market corridor cold-chain investment and to make every result reproducible by arithmetic from the stated inputs. Basis: synthetic; every input is a scenario assumption.

Inputs. Facility F, a chilled and frozen storage and handling platform on the Abidjan periphery, serving domestic distribution and a regional export lane.

INPUT	VALUE (ILLUSTRATIVE)
Total capital cost	XOF 4 200 million, approximately EUR 6.40 million at the fixed parity of 655.957
Tranche split	A 8 percent (336), B 30 percent (1 260), C 40 percent (1 680), D 22 percent (924), XOF millions
Nameplate throughput	18 000 tonnes per year
Contribution per tonne before energy	XOF 105 000
Energy intensity	400 kWh per tonne
Grid tariff	XOF 50 per kWh
All-in backup generation cost	XOF 195 per kWh
Annual fixed cash cost	XOF 520 million
Value at risk per interruption exceeding backup autonomy	XOF 34 million
Demand-limited utilisation	90 percent
Cash horizon	10 years, no terminal value, no tax (deliberate simplification)

Calculation 1, the margin arithmetic. Energy at 400 kWh per tonne costs XOF 20 000 per tonne on grid and XOF 78 000 per tonne on backup. Contribution per tonne is therefore XOF 85 000 on grid and XOF 27 000 on backup. Where a fraction g of energy comes from backup, contribution per tonne is 105 000 minus (1 minus g) times 20 000 minus g times 78 000, which is 85 000 minus 58 000 g. The relationship matters more than the number: for a cold-chain asset, a power interruption inside backup autonomy is a unit-cost event, not a volume event. Every point of energy shifted onto diesel costs XOF 580 per tonne of throughput.

Calculation 2, the utilisation arithmetic. Utilisation is demand-limited utilisation multiplied by lane availability multiplied by customs availability. Power does not reduce throughput while backup holds; it raises unit cost and, beyond autonomy, destroys stock. The backup share of energy is therefore taken as one minus power

availability, which ties the two calculations together: a 97 percent power availability produces a 3 percent backup share, and the base case reconciles.

Calculation 3, the five cases. The board-pack case applies a single blanket five-point operational haircut to a demand-derived 90 percent and assumes no backup running and no stock loss. The remaining cases apply the compounding identity.

CASE	POWER AVAIL.	LANE AVAIL.	CUSTOMS AVAIL.	UTILISATION	BACKUP SHARE	CONTRIBUTION PER TONNE (XOF)	STOCK-LOSS EVENTS	EBIT (XOF M)
1. Board pack as submitted	100.0	100.0	100.0	85.0 percent	0 percent	85 000	0	780.5
2. All gate thresholds met	97.0	96.0	98.0	84.7 percent	3 percent	83 260	0	749.0
3. One notch below thresholds	94.0	92.0	95.0	78.7 percent	6 percent	81 520	2	566.2
4. Weak case	90.0	88.0	92.0	72.9 percent	10 percent	79 200	5	348.8
5. Severe case	85.0	82.0	88.0	64.9 percent	15 percent	76 300	9	65.9

Reading case 2 in full, so that the arithmetic is visible: utilisation is 0.90 times 0.96 times 0.98, which is 84.67 percent, giving 15 241 tonnes; contribution per tonne is 85 000 minus 58 000 times 0.03, which is XOF 83 260; contribution is XOF 1 269.0 million; less fixed cash cost of XOF 520 million, EBITDA is XOF 749.0 million; over ten years at 12 percent the annuity factor is 5.6502, giving XOF 4 232.0 million against capital of XOF 4 200 million, so net present value is plus XOF 32.0 million.

Calculation 4, the discount-rate comparison. Holding case 2 and flexing only the rate:

DISCOUNT RATE	NPV OF THE GATE-THRESHOLD CASE (XOF M)
10 percent	+402.3
12 percent	+32.0
14 percent	-293.1

A full two hundred basis points moves net present value by about XOF 325 million downwards or XOF 370 million upwards. Moving from case 2 to case 3, a single notch of infrastructure performance, moves it by about

XOF 1 033 million, more than three times as much. Moving to case 4 moves it by about XOF 2 261 million, about seven times as much. This is the whole argument in one table.

Result. The asset is marginal at the gate thresholds and value-destroying one notch below them. The correct board decision on these figures is not to refuse the project; it is to refuse to authorise tranches B and C until the measurement establishes which case the asset is actually in, and to require, as a condition of the C release, either evidence of case 2 or a redesign that moves the thresholds, for example larger backup autonomy, a second inbound lane, or a smaller nameplate matched to the measured availability rather than to the demand study.

Sensitivity beyond the table. Two further moves are worth running on the reader's own numbers. First, holding utilisation at case 2 and varying only the backup share from 3 to 12 percent costs about XOF 79.5 million of EBITDA, roughly one tenth of the base; backup cost is real but it is not the largest term. Second, adding a single stock-loss event beyond autonomy costs XOF 34 million, so the difference between eight and sixteen hours of autonomy is worth more than most of the equipment specification arguments the committee will actually have.

Interpretation. The scenario is not a prediction. It demonstrates three things. Availability compounds, so conditions that each pass individually can fail jointly. For cold-chain and process assets, unreliable power shows up as unit cost until autonomy is exhausted and as catastrophic loss immediately afterwards, which makes autonomy a financial parameter and not an engineering one. And the discount rate, in this corridor and at these magnitudes, is a small dial next to the availability grid. Every number must be re-run on the reader's own asset before it is used for anything.

Failure modes and invalid uses

Five recurring failure modes, each with its trigger and owner. The trigger, not the mood of the quarter, forces the escalation.

FAILURE MODE	ESCALATION TRIGGER	OWNER	RESPONSE
Letter-for-log substitution: a utility or supplier assurance accepted where the schedule requires measured data	Any tranche paper citing a letter where a log is specified	CFO	Tranche frozen; the measurement window restarts from zero
Average-for-tail substitution: the pack reports means where the schedule requires P90	Any board paper without both percentiles and the ratio	Project director	Paper returned unread; the meeting does not proceed on it
Gate inflation by phasing: the sponsor splits an equipment order into payments that individually sit below the gate	Any equipment payment made outside a released tranche	Board chair	Treated as a control breach, not as a scheduling matter
Backup theatre: a generator installed, commissioned on paper, never load-tested at full load	No full-load test recorded within 90 days of installation	Operations director	Test within 14 days or Tranche D is withheld

FAILURE MODE	ESCALATION TRIGGER	OWNER	RESPONSE
Evidence ageing: artifacts older than the window used at a gate	Any artifact over 90 days old at a release decision	CFO	Re-measure; the age waiver is a board decision, never a management one

NOT VALID FOR

This briefing must not be used as: lender due diligence or a substitute for a technical adviser's report; a project-finance credit analysis; a bid decision on a concession or public-private partnership, whose risk allocation is contractual rather than observational; a tariff-setting or regulated-utility planning method; availability engineering for nuclear, hydrocarbon, heavy-process or safety-critical assets, which is governed by sector codes this briefing does not touch; an environmental or social impact assessment; a country risk rating; a basis for any statement about a named public entity's creditworthiness; a method for markets outside the WAEMU corridor without rework of the institutional map; or any use of the illustrative scenario figures as market data or as a benchmark for a real asset. It does not replace a hurdle rate. It tells you what belongs inside one.

Stakeholder and institutional map

The capital release decision sits inside an institutional lattice the board should map by name before, not during, construction.

INSTITUTION	ROLE IN THE CAPITAL RELEASE DECISION	WHAT TO MONITOR
National utility and grid operator	Counterparty to the connection agreement; the firm capacity in kVA is a contractual number, not an aspiration	Connection agreement terms; feeder-level interruption record; planned works on the feeder
Electricity regulator (ANARE-CI in Cote d'Ivoire, the sector regulator in each member state)	Defines and publishes the service-quality indices; sets ceilings; publishes an annual activity report	The published index for the specific feeder, requested in writing; annual report each June
Port authority and terminal operator	Sets the dwell environment for inbound equipment and outbound product	Terminal operating hours, appointment systems, published tariffs and their revision dates
Customs administration	Controls declaration-to-release time; TFA Article 7.6.1 encourages members to measure and publish average release times	Whether a Time Release Study exists for the relevant office; regime and HS classification decisions affecting the asset's inputs
UEMOA Commission	Common external tariff on imported plant and spares; a tariff revision changes both capex and maintenance cost	Tariff revisions touching the equipment list

INSTITUTION	ROLE IN THE CAPITAL RELEASE DECISION	WHAT TO MONITOR
National investment promotion agency (CEPICI in Cote d'Ivoire, APIX in Senegal)	One-stop point for the permit sequence; the sequence, not the individual permit, is the risk	Statutory clocks and their observance; the dependency order
BCEAO	Monetary anchor: the fixed parity of 655.957 makes the euro leg of the capital cost stable and removes currency from the residual risk list	Policy stance for the cost of local working-capital lines
OHADA framework	Enforceability of security over equipment; registration is what makes security recoverable	Uniform-act revisions; registration practice in the relevant registry
Offtakers and anchor counterparties	Their payment behaviour underwrites the ramp-up; published positions are not observed receipts	Observed days-to-cash; concentration; for public counterparties, the budget line and arrears record
Development finance institutions and guarantors	Where availability risk is transferred, they set the evidence standard	Their own conditions precedent, which frequently exceed the sponsor's

The French edition of the connection agreement, the permit register and this briefing is not a courtesy: French is the language of legal record across the OHADA states, and a security interest is enforced in the language in which it was registered.

Operating constraints and dependencies

Three external dependencies sit outside the sponsor's control and are monitored, not managed:

DEPENDENCY	WHAT WOULD CHANGE THE BRIEFING	WHERE TO MONITOR
Grid investment and generation adequacy on the relevant feeder	A material improvement or deterioration moves the power availability term and therefore the whole grid	Regulator's annual report; utility works programme
Customs and port reform trajectory	Publication of an average release time, or a single-window deployment, converts an unmeasured variable into a measured one	Customs administration notices; WTO TFA notifications
Fuel supply and pricing for backup generation	The backup cost per kWh is a live input; a fuel price move reprices every interruption	Fuel supplier contracts and national pricing decisions

Five constraints bound implementation. **Data constraint:** ninety days of half-hourly metering requires a logger and a site presence before capital is committed; budget it as a project cost of a few hundred thousand CFA francs, not as an option to be dropped when the schedule tightens. **Sequencing constraint:** the measurement window sits on the critical path, and compressing it is not a scheduling decision but a purchase of speed with evidence; if the board wants to compress it, the minute should say so in those words. **People constraint:** the person who can refuse a tranche must exist, must be named, and must not be the person whose incentive

depends on reaching financial close; where that separation is impossible, the gate is decorative. **Counterparty constraint:** public offtakers frequently cannot supply six months of receipts; substitute the budget line, the arrears record and a hard concentration cap, and do not pretend the substitution is equivalent. **Legal constraint:** security over process equipment under the OHADA uniform acts requires registration to be enforceable; unregistered security is not recovery, and the recovery assumption in the tranche design depends on it.

Implementation cadence and field checks

The cadence is fixed, not aspirational. Each window has one owner. Day 0 is the Tranche B decision.

WINDOW	ACTIVITY	OWNER
Day -180 to -90	Site control; permit register opened; data logger installed; connection application filed	Project director
Day -90 to 0	90-day metered window runs; 40 lane movements logged; 30 customs clearances logged	Project director with supply chain lead
Day 0	Tranche B decision against the power thresholds	CFO with the project director
Day 0 to 120	Civil works; counterparty receipts file assembled; lane and customs files refreshed	CFO
Day 120	Tranche C decision against the lane, customs and payment thresholds	Board investment committee
Commissioning + 30 days	Tranche D decision against live-operation thresholds	CFO
Quarterly thereafter	Availability, lane and days-to-cash report against the same thresholds	Operations director
Annually	Full re-run of the scenario arithmetic on actual logs and actual ledger	CFO

Field checks, asked in the room by the chair before any tranche releases:

1. Which log, over which dates, at which meter?
2. What is the P90, what is the P50, and what is the ratio?
3. How many interruptions exceeded backup autonomy, and what did each one cost?
4. Which permits are held on paper and which on assurance?
5. Which counterparty is above 25 percent of first-year revenue, and what instrument covers it?
6. If we stop tonight, what is unrecoverable?

A no, or an approximation, to any of these defers the tranche. The deferral rule is itself the discipline.

Decision log

Every tranche decision is recorded at the moment it is made, in this format, and the log is reviewed at each board session during construction:

FIELD	ENTRY
Date and tranche	
Decision (release / partial release / defer / refuse)	
Artifacts cited, with measurement dates and window lengths	
Measured value against each threshold, threshold by threshold	
Cumulative capital released; cumulative unrecoverable if stopped today	
Conditions attached, with expiry dates	
Owner and countersignature	
Next measurement date	

The log converts capital release from a series of meetings into an auditable series of measurements. After one construction cycle it becomes the sponsor's own corridor dataset, and it is the only source that will ever give the joint distribution the economics movement identifies as the highest-leverage unknown.

Exception and escalation protocol

Exceptions are permitted; unlogged exceptions are not. A tranche released below threshold requires a written board decision quantifying the capital placed at risk and stating an expiry date for the exception; standing exceptions are re-authorised or lapse at each board session.

RUNG	TRIGGER	DECIDED BY	CLOCK
1	Any threshold missed by less than 10 percent of its value	Project director, documented in the file	Within 5 working days
2	Any threshold missed on power continuity or counterparty payment behaviour	CFO	Before any payment against the tranche
3	Partial release, or release on evidence older than 90 days	Board investment committee	Before commitment
4	Any release below the Tranche C thresholds, or cumulative unrecoverable capital above 40 percent of total capital with any gate unpassed	Full board, minuted, with the value at risk quantified	Before commitment

Any attempt to route around the ladder, including an equipment order placed against a supplier's deadline rather than against a released tranche, is itself logged as an exception event and reported at rung 3.

Transferability, limits and sources

What transfers. The compounding availability identity, the P90-to-P50 tail test, the principle that gate severity tracks asset specificity rather than tranche size, the artifact-class discipline that refuses a letter where a log is specified, and the decision log. None of that is corridor-specific; it applies to any capital-intensive asset in any environment where enabling conditions are outside the sponsor's control.

What does not transfer. The thresholds. 97 percent availability, eight hours of autonomy and a P90-to-P50 ratio of 2.0 are cold-chain numbers set against a perishable product and a specific loss function. A dry warehouse tolerates far more; a foundry, a pharmaceutical line or a data centre requires far more and measures different things. The counterparty evidence assumes an environment where receipts can be reconciled to invoices at line level. The institutional map is WAEMU and OHADA; outside it, every row changes. The macro calibration is dated to mid-2026 official publications and expires with them.

Adjacent corridors, for contrast. A sponsor also building in Ghana or Nigeria should not carry this schedule across the border unchanged. In a floating-currency market the capital denomination question returns and the tranche schedule needs a currency trigger of its own, because a nine-month slip between tranche B and tranche C is a currency event as well as a schedule event. Where a merchant power market exists, availability can partly be purchased rather than measured, which changes the evidence class at gate B from a log to a contract. The identity and the gate logic survive; several thresholds and one whole evidence class do not.

Label status. The phrase used descriptively in this briefing to name the practice of gating capital release against evidence is an unregistered candidate label on the firm's canonical naming register, on a decision clock running to 31 August 2026, with disposition owned by the Signature IP Steward. It is not a governed instrument, not a registered asset and not a trademark; it carries no trademark symbol and confers no proprietary claim. Until the Steward rules, the practice is described, not branded, and no reader should treat the phrase as naming a product. The Decision Authorization Canvas referenced in the instruments movement is a registered framework at maturity F2, that is, designed and under validation, and is described as such rather than as field-proven.

Evidence we looked for and did not use. This section is part of the instrument. Several anchors that would have strengthened the briefing could not be traced to a specific published number with a stated unit and period, and are therefore absent rather than approximated. No container port dwell time or median time in port for Abidjan, Dakar or Lome is used: no per-port published figure could be verified, and the one widely circulated index is co-produced with a commercial data vendor, which places it outside the source classes this firm admits. No weighted Enterprise Surveys country indicator is used for outages per month, value lost to outages or generator ownership; only the raw response distribution of the Cote d'Ivoire 2023 microdata variable, with that limitation stated where it appears. No SAIDI or SAIFI value is asserted for any country, because no value with a confirmable unit was found; the regulator's mandate and the index definitions are used, and the reader is told to obtain the feeder-level figure directly. No Logistics Performance Index or Business Ready pillar score is used. No African Development Bank infrastructure financing gap figure is used, because the circulating figures are mutually inconsistent and none was traceable to a single published basis. No World Customs Organization Time Release Study result is used for either administration, because none was located. The absence of these numbers is the reason the briefing instructs the reader to measure the specific site, the specific lane and the specific customs office rather than to rely on a published aggregate; that instruction is not a rhetorical device, it is what the evidence position actually requires.

Refresh conditions. Re-validate this briefing on any of the following, and in any case every two quarters:

1. Publication of a Time Release Study, or of feeder-level reliability indices, for a location relevant to the reader's asset.
2. Any change to the national grid connection regime, tariff structure or fuel pricing for backup generation.
3. Any new Enterprise Survey round for Cote d'Ivoire or Senegal.
4. Any revision to a material counterparty's audited debt or arrears position.
5. Any UEMOA common external tariff revision touching imported plant or spares.
6. The Signature IP Steward's decision on the candidate label, due by 31 August 2026.

Claim ledger. The briefing's material claims, as graded in the governed evidence register:

CLAIM	TYPE	GRADE	SOURCES	VALID AS OF
Public investment efficiency gap around 30 percent; 0.3 against 0.6 percentage points of output per 1 percent of GDP invested by efficiency quartile	Observed fact	SEG-5	IMF, *Making Public Investment More Efficient*, June 2015	2026-08-03
Cote d'Ivoire 2023 outage response distribution: 547 valid responses, modes at 2, 3, 5 and 1, maximum 420	Observed fact	SEG-4	World Bank Enterprise Surveys, Microdata catalog 6439, variable c7	2026-08-03
Sub-Saharan Africa: 51 percent of surveyed firms self-generate, meeting 27 percent of demand; backup near 14 percent of commercial and industrial use	Observed fact	SEG-4	EIA, *International Energy Outlook 2020*, Issue in Focus: Africa	2026-08-03
Senegal central government debt revised 74.4 to 111.0 percent of GDP at end-2023; 118.8 percent at end-2024	Observed fact	SEG-5	IMF Press Release No. 25/282, 26 August 2025	2025-08-26
TFA implementation commitment rates: Senegal 71.0 percent, Cote d'Ivoire 47.1 percent	Observed fact	SEG-4	WTO Trade Facilitation Agreement Database	2026-08-03
TFA Article 7.6.1 encourages measurement and publication of average release times	Observed fact	SEG-5	WTO, Agreement on Trade Facilitation	2026-08-03
Access to electricity 2023: Cote d'Ivoire 72.4 percent, Senegal 74.2 percent of population	Observed fact	SEG-4	World Bank, WDI EG.ELC.ACCS.ZS	2026-08-03
ANARE-CI created by decree 2016-785 of 12 October 2016; annual report by 30 June; SAIDI and SAIFI regulated	Observed fact	SEG-4	ANARE-CI institutional pages	2026-08-03

CLAIM	TYPE	GRADE	SOURCES	VALID AS OF
Fixed parity 655.957 XOF per EUR; convertibility guaranteed; unchanged since 1999	Observed fact	SEG-6	BCEAO; DG Tresor	2026-08-02
BCEAO policy rate 3.00 percent; union growth 6.5 percent in 2025, 6.1 percent expected 2026	Observed fact	SEG-5	BCEAO CPM communique, 10 June 2026	2026-06-10
Compounding availability identity and its values	Calculated inference	SEG-5	Stated inputs	2026-08-03
Scenario EBITDA and net present value results across five cases	Calculated inference	SEG-5	Stated synthetic inputs	2026-08-03
Capital should be released in tranches against artifacts, with gate severity tracking asset specificity (house position)	Interpretation	SEG-1	None: firm position, so labelled	2026-08-03
The recurring control failure is substitution of artifact class (house position)	Interpretation	SEG-1	None: firm position, so labelled	2026-08-03

Sources. International Monetary Fund, *Making Public Investment More Efficient*, policy paper, June 2015, with the accompanying IMF Survey note (efficiency gap; output by efficiency quartile). World Bank Group, Enterprise Surveys, Cote d'Ivoire 2023, Microdata Library catalog 6439, variable c7 (outage response distribution). U.S. Energy Information Administration, *International Energy Outlook 2020*, Issue in Focus: Africa (self-generation shares, drawing on World Bank Enterprise Survey data). International Monetary Fund, Press Release No. 25/282, 26 August 2025 (Senegal debt reconciliation and revision). World Trade Organization, Trade Facilitation Agreement Database, member pages for Senegal and Cote d'Ivoire, and the Agreement on Trade Facilitation, Article 7.6. World Bank Group, World Development Indicators, EG.ELC.ACCS.ZS, reference year 2023 (electricity access). ANARE-CI, institutional pages (regulator mandate, annual report obligation, index definitions). BCEAO, history of the CFA franc, and Monetary Policy Committee communique of 10 June 2026; Direction generale du Tresor, publication of 23 December 2019 (parity, guarantee, policy rate, growth). OHADA, treaty and uniform acts (security registration). All new anchors verified against the publishing institution on 3 August 2026; reused anchors verified 2 August 2026 in the governed estate registers. The worked scenario is synthetic and sourced to no external data. House positions are graded SEG-1 and labelled as interpretation wherever they appear. No consultancy, vendor or brokerage statistic appears anywhere in this publication.

Assurance status. No validator, renderer or assurance script has been run against this edition. The mechanical gates outstanding are listed in `estate/pilot/briefings/VALIDATION-PENDING-capex.md`. Nothing in this document should be read as having passed a control that has not run.