

A guide · The $500 trillion PPP infrastructure opportunity

Launch a PPP program for Banks in Jordan

WHAT THIS GUIDE IS FOR

Your bank launches a dedicated program to finance public-private partnership (PPP) projects, the Jordanian contractors and technology companies that build and run them, and the first tokenized infrastructure, starting with Jordan's $86 billion and Aqaba's $46 billion of projects.

PREPARED FOR
Banks in Jordan

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INTRODUCTION

A century of infrastructure reaches the end of its useful life

Most of the roads, bridges, power plants, water networks, ports and airports the world runs on were built in the last hundred years, and much of that stock is wearing out at the same time.

The infrastructure of the twentieth century was designed, poured and left to age. It carried the growth of every modern economy, and it was built for a world with fewer people, far less data and a different climate. Pipes leak, grids strain under new demand, and assets designed for one purpose are asked to carry several. Replacing them is the largest building program in human history, and it has already begun.

Rebuilding and running the world's infrastructure will take about $500 trillion over the next fifty years. It is the largest investment humanity will make in that time. Public-private partnerships (PPPs) will carry a large share of it, because governments cannot fund, build and run the rebuild alone, and the private sector cannot do it without them.

How the $500 trillion adds up

	$300T	to build the physical assets: roads, rail, ports, grids, water, cities, schools and hospitals
+	$150T	to operate and maintain them across the life of each concession
+	$50T	for the sensors, compute and robotics that will sit inside them, the share of the rebuild that venture capital can fund
=	$500T	**in total to rebuild and run the world's infrastructure over the next fifty years**

INTRODUCTION

The next hundred years will build Earth's largest computer

For thousands of years the method has stayed the same: design it, pour it, forget it, and repair it when it fails. The next generation of infrastructure will carry a software layer specified alongside the concrete. Assets will monitor their own condition, predict their own failures and schedule their own maintenance, and fleets of machines will raise them with very few human hands involved.

The larger change is the connection between assets. When a port knows what the rail line is carrying before it arrives, a water utility prices its pumping energy against the grid in real time, and every contract and drawing on every project sits in one connected record, the built world starts to behave as one system. Joined across borders, the world's roads, grids, ports, water networks, data centers and satellites become one globally connected, superintelligent computer.

Future infrastructure will be self-building, self-monitoring and self-healing. A road that senses its own cracks can schedule its own repair and use the savings to fund the next stretch. A water network that finds its own leaks can put the recovered water into meters on the next street. Each asset leaves behind the money, the data and the proof for the asset that follows it, so each new project starts further ahead than the last.

The point where the built world starts improving itself faster than anyone can direct it is the infrastructure singularity. Three technologies bring it closer: artificial intelligence designs and runs the assets, robotics builds and maintains them, and tokenization finances them and opens their ownership to everyone. Each of the three changes how infrastructure is financed, and banks sit at the center of that change.

Debt carries most of the capital in a typical PPP, and the projects of the next fifty years will be financed, monitored and traded in new ways. Lenders that build a PPP program now will finance the rebuild from its first projects onward. This guide invites every bank in Jordan to launch that program, starting with the projects at home.

THE GUIDE

Finance Jordan's share of the $500 trillion PPP infrastructure opportunity

Your bank launches a dedicated PPP program, a team and a set of products that finance projects from tender to operation, along with the Jordanian companies that supply them and the technology that runs them, starting with Jordan's $86 billion of projects and the $46 billion anchored in Aqaba.

01 **A PPP desk.** A dedicated team that knows how PPPs are prepared, procured and financed meets every project in Jordan's pipeline early, while sponsors are still choosing their lenders.

02 **Products for the whole life of a project.** Bid bonds and guarantees during the tender, bridge and construction loans through the build, long-term loans through operation, hedging, escrow and project accounts, and refinancing once the asset is earning.

03 **Finance for the supply chain.** Working capital, equipment finance and supply-chain finance for the Jordanian contractors, subcontractors, suppliers and technology companies that deliver each project bring the bank a wide base of new clients around every concession.

04 **Small-scale PPPs as a product line.** Jordan's PPP Regulation No. 9 of 2024 defines small-scale PPPs below $14.1 million, which can be bundled into one feasibility report and one tender, and PPP Law No. 19 of 2023 accepts direct private proposals under Article 15. Standard terms for small projects let the bank lend to many of them at low cost.

05 **Tokenized infrastructure notes.** The bank issues and holds in custody tokenized participations in PPP loans and project revenues, which opens operating infrastructure to Jordanian and regional investors and releases balance sheet for the next project.

JORDAN AND AQABA

An $86 billion pipeline to finance at home

Jordan has 243 PPP and infrastructure projects in development, worth about $86 billion, of which $46 billion is anchored in Aqaba. Every one of them will need loans, guarantees and accounts.

$86 billion
of PPP and infrastructure projects in development across Jordan

$46 billion
anchored in Aqaba, Jordan's only port and its gateway to the Red Sea

SECTOR	PROJECTS	VALUE	WHAT THE PROJECTS WILL BUY
Energy	33	**$28.3 billion**	Grid and demand forecasting, solar and storage analytics, robotic panel cleaning, predictive maintenance
Tourism	40	**$13.8 billion**	Visitor flow and demand forecasting, resort and heritage-site operations, booking and payment rails
Urban development	17	**$13.8 billion**	Digital twins of new districts, digital permitting, modular construction, district operations
Transport	33	**$11.7 billion**	Traffic and fleet AI, tolling and payments, inspection drones for roads and rail
Industry	31	**$8.1 billion**	Factory automation, quality verification, industrial sensors and energy management
Water	29	**$7.6 billion**	Leak detection, pressure management, smart metering, pipe-inspection robots
Mining	15	**$1.2 billion**	Autonomous drilling and haulage, drone surveying, ore sorting
Health	12	**$1.0 billion**	Hospital operations AI, patient flow, equipment monitoring
Agriculture	10	**$310 million**	Precision irrigation, farm robotics, crop and soil monitoring
Environment	15	**$270 million**	Waste-sorting robotics, emissions monitoring, circular materials
Digital	6	**$270 million**	Data centers, connectivity, sovereign compute
Education	2	**$20 million**	School and training campus PPPs, digital learning, building operations and energy retrofits

A Jordanian bank that finances one project at home can carry the same structure to the next one across the region. Aqaba concentrates ports and terminals, logistics, rail to the port, industry, energy, water and tourism inside the Aqaba Special Economic Zone, which makes it a single place to test port automation, logistics software, desalination and energy technology on assets that connect Jordan to the world.

SECTOR GUIDES

Jordan's $86 billion, sector by sector

Jordan is investing in and advancing 23 sectors at once, and together their projects make up the $86 billion. A sector guide for each lists every project in it, its link to the infrastructure singularity and the ways a partner can take part.

The sectors closest to banks

Urban Development	Construction is the largest single use of Jordanian bank credit (about 24% of all facilities, end-2023). 30 projects, $12.8bn of forward investment. www.JordanPPP.com/sectors/urban
Water	Housing Bank leads a local bank syndicate of up to $770m for the Aqaba-Amman National Carrier desalination project. 29 projects, $6.7bn of forward investment. www.JordanPPP.com/sectors/water
Solar Power	Arab Bank lent $16m alongside EBRD and DEG to ACWA Power's 50MW Risha solar plant. 18 projects, $326m of forward investment. www.JordanPPP.com/sectors/solar
Oil, Gas and Power	Housing Bank led the syndicate financing the Jordanian section of the Arab Gas (Fajr) pipeline. 23 projects, $15.1bn of forward investment. www.JordanPPP.com/sectors/oil-gas
Transport	Arab Bank led a $250m syndicated loan to Royal Jordanian (2025). 32 projects, $8.1bn of forward investment. www.JordanPPP.com/sectors/transport

All 23 sector guides

Oil, Gas and Power	$15.1bn	Wastewater and Reuse	$946m
Tourism	$13.8bn	Nuclear Energy	$835m
Urban Development	$12.8bn	Agriculture and Food	$400m
Green Hydrogen	$10.6bn	Solar Power	$326m
Transport	$8.1bn	Digital and AI	$243m
Water	$6.7bn	Circular Economy	$189m
Fertilizers and Chemicals	$6.5bn	Wind Power	$186m
Ports and Logistics	$3.6bn	Pharmaceuticals	$128m
Manufacturing	$2.4bn	Creative Industries	$47m
Storage and Grids	$1.4bn	Defense	$10m
Mining and Minerals	$1.2bn	Education and Skills	$7m
Health	$986m		

Every sector guide can be read and downloaded at www.JordanPPP.com/sectors.

ARTIFICIAL INTELLIGENCE

AI designs, structures and runs it

A PPP takes about seven years from concept to financial close and costs roughly 10% of capex to structure. Almost all of that work is documents and models, which is the work AI does well.

What changes

When the cost of intelligence approaches zero, the cost of preparing a project falls with it. Feasibility studies, options appraisals, cost plans, risk matrices, financial models and tender documents can be produced and tested in days, and contracts can be drafted and stress-tested in hours. PPP projects will soon appoint an AI technical advisor alongside the human ones. Once an asset is running, the same intelligence operates it: a digital twin models the asset in real time, sensors report wear and faults early, and maintenance follows the data.

Jordan arrives late to PPP software, and that is an advantage. With few legacy systems to migrate off, AI-native tools can be built from the ground up, and the reasoning behind each decision can be captured inside the transactions being structured today.

What it means for banks

AI lets a bank assess a PPP as thoroughly as the project team that built it. Credit teams can test a financial model, read a concession agreement and its schedules, and compare a project against similar deals in hours. Once the asset is operating, the sensors and digital twins that run it give the lender live data on performance, so monitoring costs less and problems surface earlier.

What will be built

Project preparation	Software that turns feasibility studies, cost plans and tender documents into a repeatable process, so the years spent before tender shrink to months.
Procurement	Tools that let ministries compare bids on whole-life cost and deliverability.
Cost estimation	A national benchmark database that prices every project against real Jordanian rates.
Contract intelligence	Assistants that read, compare and answer questions on every contract, drawing and instruction on a project in plain language.
Asset monitoring	Sensors and digital twins that tell an operator what will fail before it fails.
Permits and approvals	Digital workflows that replace the paper trail across ministries, municipalities and utilities.

ROBOTICS

Robots build it and keep it running

Most of the $500 trillion of infrastructure due over the next fifty years will be built by machines, and people will design, train and supervise those machines.

What changes

Autonomous software combined with autonomous machines produces autonomous infrastructure. Tunneling machines, construction robots, drones and modular factories already raise structures with far fewer people on site. The machines then stay with the asset: drones inspect bridges and power lines, robots travel inside pipes to find leaks, and cleaning robots keep solar fields at full output.

Robotics also changes who can compete. A small company with the right machines can build what once needed a thousand-person contractor, and it can prove its method on a pilot before anyone asks for a track record, which opens PPP work to new companies for the first time.

What it means for banks

Robotics lowers the cost and the risk of building and maintaining an asset, and that risk is what lenders price. Projects that use inspection drones, leak-finding robots and automated construction finish closer to schedule and fail less often in operation, and the companies that supply those machines need equipment finance, leasing and working capital as they grow.

What will be built

Water networks	Robots and acoustic sensors that find leaks inside the network, in a country that still loses about 41% of its water to leaks, theft and faulty meters.
Construction	Modular methods, on-site automation and quality verification suited to Jordan's labor market.
Inspection	Drones and crawlers that survey roads, bridges, rail, power lines and pipelines and report defects automatically.
Energy	Robotic cleaning and maintenance for solar fields, and retrofit technology for public buildings, street lighting and water pumping.
Mining	Autonomous drilling, haulage and drone surveying for phosphate, potash and new mineral projects.
Ports and logistics	Automated handling, yard robotics and drone delivery for Aqaba's terminals and Jordan's dry ports and border crossings.

TOKENIZATION

Tokenization finances it and opens its ownership

A PPP absorbs capital over four years and releases it over thirty. Today's investors expect to enter and exit easily, and tokenization gives them that option.

What changes

A concession is a long-dated, contracted, inflation-linked cash flow, the kind of asset a token represents well and an ordinary investor has rarely been able to hold directly. Tokenization lets a small pilot be funded by a few hundred investors, with returns paid automatically from the asset's own revenue and no lender between them.

The rails already exist in the region. ADGM regulates tokenized securities, the Dubai Land Department records tokenized title deeds on its own register, and Jordan adopted a national Blockchain Technology Policy in December 2024. Tokenized concession revenues are still rare, so the first tokenized PPP in Jordan is open to whoever builds it.

PPP companies will be tokenized before PPP projects, because a developer already gathers projects, risks and revenues into one entity. People will own the builders first, then the portfolios, then the projects, and at the end of that sequence sits a stock exchange for the physical world.

What it means for banks

Tokenization turns a bank into an issuer, a custodian and a distributor for infrastructure. The bank can originate a PPP loan, place tokenized participations with its own retail and private clients, pay them from the project's revenue through smart contracts and keep the relationship with the borrower, which releases capital for the next project.

What will be built

Issuance	Compliant token issuance for PPP companies, infrastructure funds and small pilots.
Investor onboarding	Identity checks, suitability and custody built for Jordanian and regional investors.
Revenue distribution	Smart contracts that pay holders from tolls, tariffs and availability payments as the money arrives.
Registries	Shared records of contracts, milestones and asset performance that every party can trust.
Secondary markets	Venues where holders can buy and sell stakes in operating infrastructure.
Citizen participation	Tools for citizens to propose projects, vote them up and invest small amounts in what gets built.

SMALL PPPS IN PARALLEL

A thousand small PPPs teach more than one large one

The World Bank counted 315 private infrastructure projects reaching financial close across all low- and middle-income countries in 2024, only a few per country. No country can learn quickly at that pace, and each lesson arrives years after the technology behind it has moved on.

Each of those projects is too large, too slow and too expensive to try anything new on, and every approval, guarantee and stakeholder on a $1 billion project pulls it toward the way things were done before. Small projects are where a new idea can afford to be wrong, because the downside is small, the learning cycle is fast and the bureaucracy is thin.

Run them in parallel

Software has already moved from building one idea at a time to building ten at once, and infrastructure can follow. Picture 100 small schools built within six months, each delivered through its own PPP and each testing a slightly different legal structure, financing model, construction method and operating approach. Performance data arrives quickly, the models that work are copied, the weak ones are retired early and policy improves with every round, so a thousand small projects teach a country tens of thousands of lessons where one large project teaches a few.

$10M	spent preparing a single $100 million PPP, enough to build 100 pilots at $100,000 each
780	small PPPs a year in Jordan at $100,000 each, from 1% of the budgets of its 40 contracting authorities, about $78 million, in a country that closes only a handful of PPPs a year today
97,500	small PPPs a year if every country ran 500 at $100,000 each, for $9.75 billion, less than the price of one metro line

The PPP singularity

The PPP singularity is the point at which it becomes cheaper to build the pilot than to conduct the study. One feasibility study can make a project look feasible, another can make it look unfeasible, and the decision still comes down to judgment, while a pilot settles the argument with evidence. Governments that work this way become portfolio managers of experimentation: they set the objectives and the guardrails, standardize contracts that can adapt, collect the data and publish every pilot, every cost and every failure on one public website.

PPP RESEARCH LABS

Pilots need somewhere to live

PPP innovation needs the public and private sectors working together, so each lab is built the way a PPP is built: the public sector spearheads it and the private sector designs, finances, builds and operates it.

One lab per sector	Water, power, transport, aviation, health, education, agriculture, digital, tourism and urban development each get a lab inside the ministry or authority that runs the sector.
A one-line brief	Run ten small PPP projects a year at up to $100,000 each, testing new technologies, new PPP frameworks, new construction methods and new financing structures.
A PPP itself	The ministry tenders the lab, and private companies bid to design, finance, build and operate it with their own capital, effort and technology.
Funding	About $1 million a year per lab, found by moving 1% of an authority's budget away from inefficient spending. Ten labs can run a hundred experiments a year on a modest budget.
Open results	Every result is published as it happens, including the failures: what worked, what failed and what the contract should have said. The lessons go straight into the large PPPs already running and the ones still to come.
Room to explore	Labs carry no fixed deliverables, because predetermined outputs defeat the purpose of research, and they are judged on engineering results.

Who builds and who funds

Small projects open PPPs to founders and small companies. On a large concession a bid costs 3% to 5% of capex, prequalification asks for a decade of comparable projects and performance bonds run to tens of millions. AI cuts the bid cost, robotics cuts the crew a project needs and tokenization lets a few hundred investors fund a pilot, so a small PPP moves at the speed of the founders running it. Venture capital funds the technology, infrastructure funds finance the assets, and a $10 billion fund raised by both, deploying $2 billion in its first year, could back 20,000 small PPPs, about 100 in every country.

What it means for banks

Small PPPs give a bank a standard product it can lend against many times, with similar contracts, similar revenues and small tickets spread across every sector. A bank in Jordan that finances the labs and their pilots builds a book of performance data on new technology and Jordanian contracts, and lends into the large projects with that risk already priced.

UNSOLICITED PROPOSALS

Jordanian law accepts unsolicited PPP proposals

Any private company can take its own PPP idea to government. Article 15 of PPP Law No. 19 of 2023 lets a proposer submit a direct proposal to the Ministry of Investment or a public authority, and PPP Regulation No. 9 of 2024 sets out how it is assessed.

How a direct proposal works

Conditions	The proposal offers an innovative solution for a public service, is prepared on the proposer's own initiative, gives value for money, fits government programs, covers the government's obligations from project revenues and discloses any conflict of interest.
Contents	The scope, the proposer and its experience, a pre-feasibility study with the innovation and intellectual property behind it, the fiscal implications and any support or guarantees sought, and the cost of preparing the study.
Review	A public authority or municipality that receives a proposal refers it to the Ministry, which has 60 days to take it up for study or return it unopened, and can charge a study fee of at least $7,050.
Registry	A qualifying proposal is listed as a PPP project in the national registry of public investment projects, and one that falls short is rejected.
Tender	If the project goes to tender, the proposer can match the best offer, and if another bidder wins, the winner repays the proposer's direct study costs.
Small projects	Projects with a capital cost below $14.1 million are small-scale PPPs, and similar ones can be bundled into one feasibility report and one tender under simpler procedures.

Limitless ideas

This is the Swiss Challenge approach: the proposer brings the idea, the market competes on it and the proposer keeps the right to match the best offer. Many of the projects in Jordan's $86 billion pipeline are still early enough for a partner to shape the deal or bring its own idea, and a direct proposal can be as large as a mini city built and operated under one contract or as small as a $100,000 pilot. The PPP research labs can be proposed the same way, and every company with an idea for a public service becomes a possible project sponsor.

What it means for banks

Every direct proposal needs a financial case and a lender willing to stand behind it. A bank that issues letters of support and early term sheets for proposals under Article 15 meets projects at their very first stage, and the proposer's right to match the best offer at tender gives the bank a sponsor with a head start.

WHY BANKS

Banks decide when a PPP reaches financial close

A PPP is built on borrowed money. Sponsors bring the equity, contractors bring the build and the operator brings the service, while lenders provide most of the capital and set the terms every other party has to meet.

Where banks fit in a PPP

Tender	Bid bonds, letters of support and early term sheets that show the contracting authority a bid can be financed.
Financial close	Senior and mezzanine loans, hedging and the security package that fund the build.
Construction	Advance payment and performance guarantees, drawdown control and working capital for contractors and suppliers.
Operation	Project accounts, debt service reserves, collection of tolls, tariffs and availability payments, and refinancing once the asset has a track record.
Exit	Bonds, sukuk and tokenized notes that sell operating assets to long-term investors.

What changes for lenders

AI, robotics and tokenization change the risks lenders take and the tools they use. Projects with sensors and digital twins report their own performance, so covenants can be tested on live data. Robotic construction and maintenance narrow the gap between the financial model and the asset as built, and tokenized notes let a bank sell down a loan to many investors at once and recycle its capital into the next project.

Why a program, and why now

Without a program, a bank meets each PPP as a one-off transaction and its teams relearn the structure every time. A program gives the bank a team, a credit approach and standard documents that make each new project faster and cheaper to finance than the last. Jordan's pipeline is large and early, and the lenders in the room when sponsors form their consortiums are the ones who end up financing them.

THE PROGRAM

How the program could work

The program can sit inside the bank's corporate and investment banking teams, with a PPP desk at its center and products drawn from what the bank already offers its Jordanian clients.

PPP desk	A small team of project finance, credit, legal and technical people that covers every PPP in Jordan's pipeline from the first market sounding.
Credit approach	A PPP credit policy built around contracted revenues, availability payments and the risk allocation in each concession agreement.
Products	Bid bonds, guarantees, construction and term loans, hedging, project accounts, supply-chain finance and refinancing in one package.
Small projects	Standard terms and documents for small-scale PPPs below $14.1 million and for direct proposals under Article 15.
Technology lending	Equipment finance, leasing and working capital for the Jordanian companies supplying AI, robotics and tokenization to the projects.
Tokenized notes	A pilot issue of tokenized participations in an operating PPP loan, offered to the bank's own clients.
Partners	Co-lending with regional and international banks, development finance institutions and infrastructure funds on the larger projects.

What the bank gains

The bank gains long-dated assets backed by contracted revenue, fees across the life of each project and a place at the table when consortiums form. Every PPP brings sponsors, contractors, operators, suppliers and employees who need accounts, payments and loans, so each project also opens a new cluster of clients.

It also gains a position in the next form of infrastructure finance. The first bank in Jordan to issue tokenized participations in a PPP loan will set the standard for how operating infrastructure is sold to investors at home and across the region.

ABOUT

Jordan PPP

Accelerate Jordan
Accelerate the infrastructure singularity
Accelerate the Jordan PPP singularity

AMMAN, JORDAN WWW.JORDANPPP.COM

Jordan PPP helps every kind of organization in Jordan launch a public-private partnership (PPP) program of its own. It publishes 96 guides, one for each kind of organization, from the Royal Hashemite Court and Parliament to banks, contractors, universities, humanitarian organizations, companies in twenty-one sectors and organizations in twelve governorates.

Its vision is the infrastructure singularity, when roads, grids, ports and water networks become one globally connected, superintelligent computer, built by robotics, run by artificial intelligence and financed by tokenization. Rebuilding and running the world's infrastructure will take about $500 trillion over the next fifty years.

Its method starts small: a PPP program for every organization, small PPPs run in parallel, a research lab in each sector and direct proposals under Article 15 of PPP Law No. 19 of 2023, starting with Jordan's $86 billion and Aqaba's $46 billion of projects.

JORDAN PPP

What Jordan PPP offers

The guides

One for every organization

96 guides, each with the case, the program and six first steps.

www.jordanppp.com/guides →

The summary

All guides in one document

Every guide, its organization and its ask, in one place.

www.jordanppp.com/summary →

Futureproofing

AI, robotics, tokenization

What the three technologies change for every organization.

www.jordanppp.com/futureproofing →

The opportunity

$500 trillion

The $500 trillion PPP infrastructure opportunity, from the crisis to the exchanges.

www.jordanppp.com/opportunity →

NEXT STEPS

How a bank can start

Any bank in Jordan can take this guide forward. The first steps use the teams, products and clients the bank already has.

Mandate	Board and executive approval for a PPP program, with its target sectors, its first-year goals and the risk appetite for long-dated project lending.
Team	A named PPP desk lead, with project finance, credit, legal and technical people drawn from the bank's existing teams.
Pipeline	A map of Jordan's $86 billion of projects by sector and stage, and early meetings with the sponsors and contracting authorities behind the first of them.
Products	The bank's guarantees, loans, hedging and accounts packaged into one PPP offer, with standard terms for small-scale PPPs.
Partners	Co-lending talks with regional and international banks, development finance institutions and infrastructure funds.
Pilot	A first small-scale PPP and a first tokenized PPP note taken from idea to term sheet.

Jordan has the projects, the sponsors and a law that accepts unsolicited proposals. A PPP program gives your bank a seat in the consortiums that form around them and a head start in financing the superintelligent infrastructure future.

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