Generic Active Pharmaceutical Ingredient (API) Manufacturing

Investment pitchbook

September 2025

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Executive Summary

Attractive Investment Destination

- **Pakistan** is emerging as a **regional powerhouse**, with a **reformed economy** (inflation stabilized at the lowest level in the past 50 years and GDP expected to cross USD 3.3Tn by 2050, with stabilized currency) and **vibrant talent** (7th largest global workforce, with 64% of the workforce under 30)
- Investors can count on **strong government support**, including **accelerated licensing, tax incentives and protective tariffs** under the **National API Industry Promotion Policy**

API Import Substitution for Strong and Growing Local Demand

- The country has a **robust pharmaceutical sector** estimated at **USD 4.4Bn in 2024** and expected to reach USD 6.6Bn by 2030 (7% CAGR)
- Pakistan has a mature manufacturing ecosystem with **650+ local manufacturers, including multinationals**, that **rely heavily on API imports for local formulations**
- The **40+ APIs that are manufactured locally** are only covering an estimated **10-15% of total demand**, with an immediate pool of customers (formulators) available
- While there is significant price competition with imported APIs, local manufacturers have a **confirmed track record of offering lower prices when scaled** (e.g., paracetamol) and have **expressed interest to partner** with foreign investors

Viable and Attractive Opportunity

- Investors have the opportunity to develop and operate **a plant to manufacture API for oral solid generic products** (i.e., off-patent, such as Atenolol, Ciprofloxacin, Paracetamol, and Ibuprofen), targeting domestic formulators
- A medium-sized facility **with run-rate revenues of USD 85-90 Mn** can be set up in a special economic zone, covering **~4-5% of the long-term import size for APIs**
- Local banks can finance up to 70% of the project, resulting in c.a. **USD 18M in required equity investment and c.a. 18-20% IRR** over a 30-year operating horizon

Pakistan: Your Pharma Destination

Pakistan Value Proposition

Reformed Economy	**USD 3.3Tn[1]** Expected GDP in 2050 *(from USD >410Bn[2] today)*	**B-** Improved Credit Rating[3] from CCC-	**Top 10** In Business Entry Regulations ranking[5]	**Stabilized Inflation** At lowest levels since 1968[6]	**Stabilized Currency** Achieved since 2023 in coordination with IMF	**Special Economic Zones (SZEs)** Robust fiscal and trade incentive packages[7]

Vibrant Demographics and Talent	**255 million** Large and growing population[8]	**64%** Population younger than 30[8]	**7th largest** Global workforce[9]	**2 million** University students enrolled every year[10]

Advanced Pharma Ecosystem[11]	**650+ manufacturers / 10+ multinationals** Operating in Pakistan	**100+ thousand** People employed in the pharma sector	**100% YoY Growth** In Pharma exports	**API Growth and Promotion Policy** 5-year tax holiday, zero duties on select materials[7]	**40+ APIs** (covering 10-15% of local demand) Manufactured in the country across 10+ plants

1. Goldman Sachs; 2. National Accounts Committee; 3 Fitch Ratings; 4. Bloomberg, 84% in PKR; 5. World Bank's B-READY assessment; 6. US (St Louis) Federal Reserve Bank; 7. Pakistan Government; 8. United Nations, SIFC; 9. CIA World Factbook; 10. Higher Education Commission; 11. Pakistan Pharma Manufacturers Association

Investors have an opportunity to develop and operate an API manufacturing plant in Pakistan

Opportunity overview and key highlights

Opportunity Description

Develop and operate plant to manufacture API for oral solid generic products (i.e., off-patent, such as Atenolol, Ciprofloxacin, Paracetamol, and Ibuprofen), targeting domestic market

High-Level Opportunity Facts

A Project Details

- **APIs for Generic Drugs**
- **~5,000 MT[1] capacity**
- **International Certification (cGMP)**

B Supply-Demand Gap	– C.a. 85% reliance on imports of APIs for locally formulated generics (USD 740Mn in 2024 across 400 API types) – Demand gap estimated to reach USD 1.1Bn by 2030 in current conditions
C Investment Model	Private sector investment with strong government support
Return Profile[2]	IRR: 18-20%
D Run-rate Revenues[3]	USD 85-90Mn (c.a. 4-5% of long-term imports)
Estimated Project Cost	c.a. USD 60Mn (USD 18Mn equity)

NOTE: Plant capacity, revenue and cost per kg will depend on final API chosen for production; return profile and margins expected to remain consistent independently of chosen API

Value Proposition

Strong Market Demand in Upstream Value Chain

Focus of this Opportunity	*Advanced coverage by local producers*		
API	Formulation	Primary packaging	Secondary packaging
Over 85% of APIs imported	650+ local pharma formulators and packagers as potential customers.		

Competitive Terms: Newly introduced APIs are 4-10% more expensive than Chinese imports, but with better terms (e.g., delayed payments, lower minimum purchased volumes) and easier logistics

When scaled, local APIs become **cheaper than imports** (e.g., paracetamol)

Credible Prospective Partners: local API manufacturers have a track record of cost-efficient production at scale and exports

Skilled Technical Talent: Large talent pool of 100,000+ pharma professionals available

Strong Government Backing: Robust policies and incentives enhance project viability.

1. Metric tons; medium-to-large sized plant
2. In local currency (i.e., constant currency exchange); over 32 years of duration; assumes 70% financing
3. Estimated revenue in year 10

Source: Expert input, Pharma Manufacturers Association

A. The plant will manufacture generic APIs with generalist capabilities across therapeutical areas, targeting domestic formulation manufacturers as priority clients

Project details

(NOTE: Plant capacity, revenue and cost per vial will depend on final insulin chosen for production)

Offering

- APIs for generic (off-patent) oral-solid formulated locally
- Potential focus areas, based on high import dependency: NOTE - Top imported APIs listed in Appendix
  - Cardiovascular: Atenolol, Trimetazidine, Indapamide
  - Anti-infectives: Ceftriaxone Sodium, Cefepime
  - Others: Ibuprofen, Paracetamol

Technical Specifications

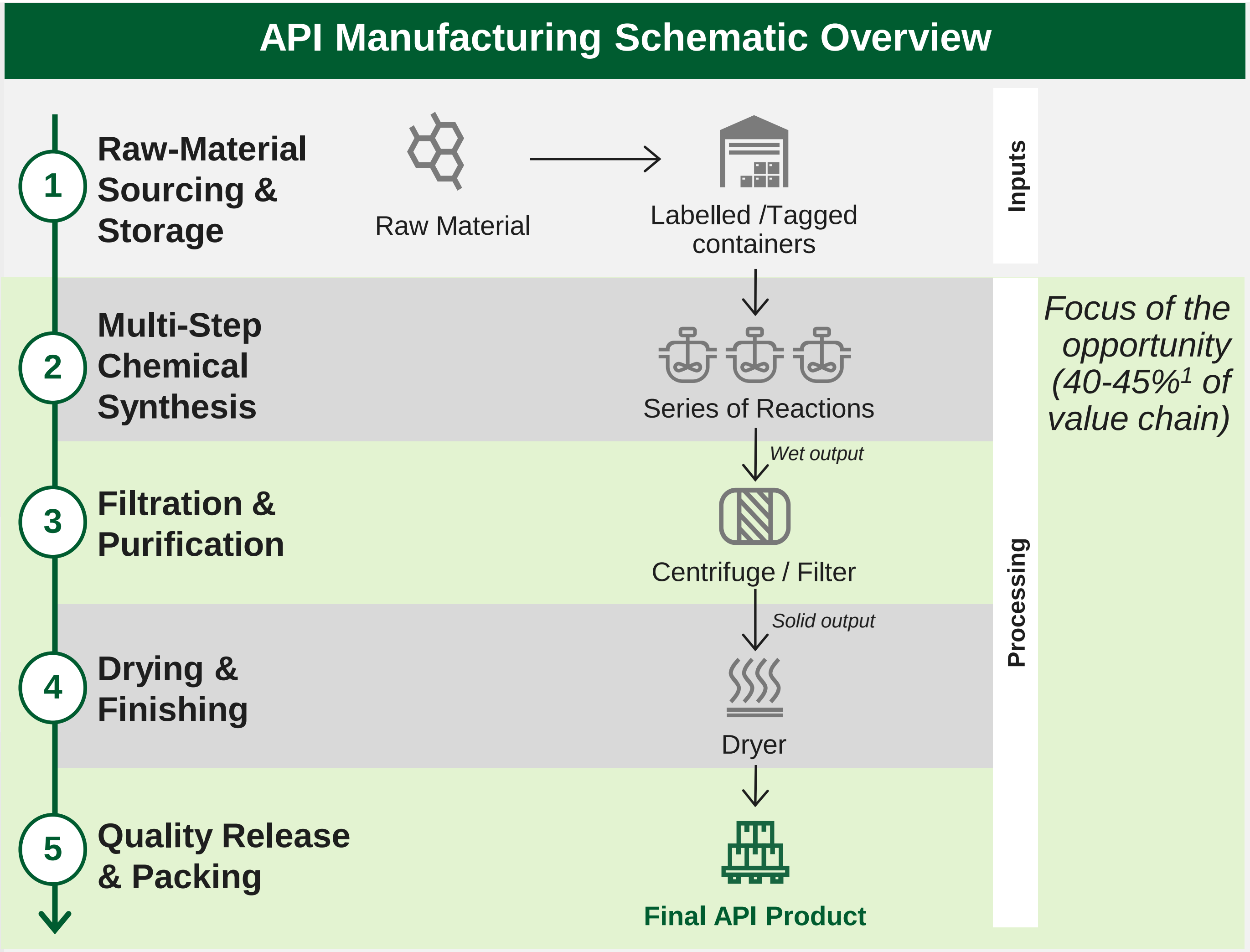
- Capacity: 5,000 metric tons per year, i.e., among the largest API manufacturers in Pakistan
- International cGMP certification enabling potential export activity

Targeted End-Users

- Immediate focus: Domestic generic formulation plants (pharma and CDMOs) currently importing APIs
- Mid-term focus: established export markets (e.g., Philippines, Sri Lanka, Myanmar, among others)

Location

- Location flexibility given existing formulation hubs and special economic zones are located throughout the country



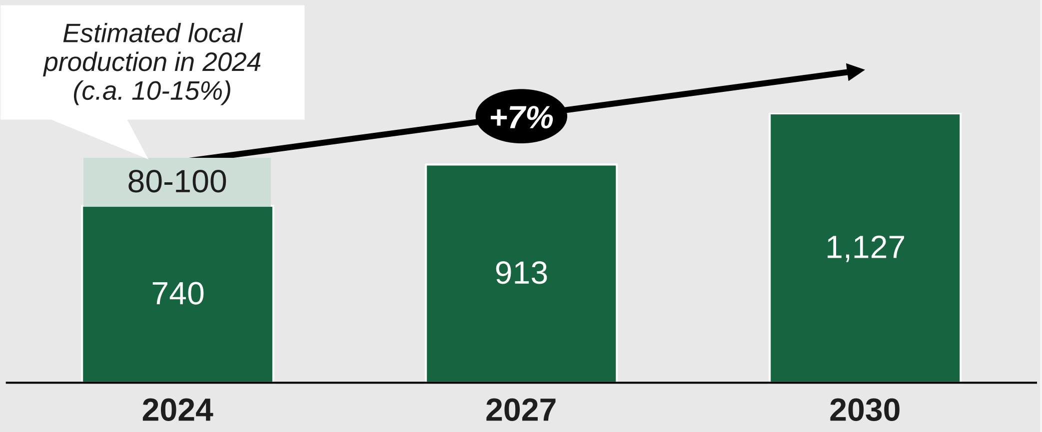
1. Industry expert estimation; includes gross margin

B. The opportunity aims to leverage Pakistan's growing Pharma market and the Government's support to reduce import reliance for APIs

API Demand Tailwinds

Estimated API Imports in Pakistan (USD Mn)1

c.a. 4-5% estimated market capture of new investment, with possibility of further scale up



- Bulk of API imports is for generic oral solid formulations (cardiovascular and antiinfectives)
- Local production covers only ~10-15% of demand, with 40+ APIs produced locally (mainly by Pharmagen, Citi Pharma as the leading API producers in Pakistan)
- Local API producers report diminishing unit production costs and export competitiveness for scaled products (e.g., paracetamol)

Demand Drivers

Demand Drivers	
Large and Growing Market	– Growing Demand: Pharma market to reach **USD 6.7Bn by 2030**, driven by rising medicine consumption among **240+ million people**, primarily generic chemicals – Immediate Opportunity: **USD 2Bn+ APIs imported (2022-24)**, enabling rapid market capture for local producers
National Strategies	– Strategic shift: industry evolution from formulation and packaging to **integrated local manufacturing** – API focus: **increased domestic production** and reduced **dependency on imports** – **Incentives:** reduced taxes (1% on raw materials), 5-year tax holiday, duty-free imports, additional duties on imports of APIs with local availability
Global Trends	– Growing Generics Market: ~USD **380Bn drugs off-patent by 2025**, increasing generic API demand – Global Supply Chain Shift: Rising protectionism pushing **pharma reshoring**; Pakistan positioned as a regional hub connecting Middle East and Asia

1. API import estimates are based on the following assumptions: chemical products represent 85% of the total pharmaceutical market; 75% of this chemical segment is locally manufactured and/or packaged; of that, 70% is locally manufactured; and APIs account for 40% of the total cost of locally manufactured chemicals; 2. US National Library of Medicine
Source: Fitch, NIH, expert input, desktop research

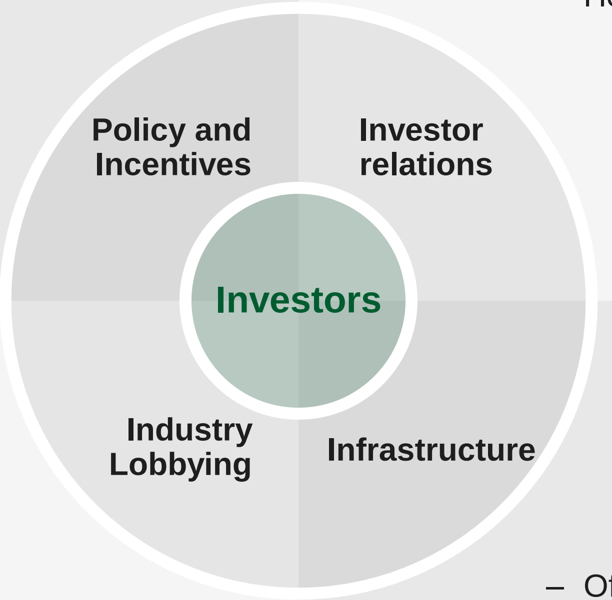
C. Investors will be supported by public and private parties in a robust Pharma ecosystem

Drug Regulatory Authority of Pakistan (DRAP / MNHRC)

– Responsible for policy framework and incentives through the DRAP Act and the Drugs Act
– Provides guidelines for licensing, registration, Good Manufacturing Practices (GMP), pharmacovigilance, and market surveillance
– Offers regulatory and technical support, as well as capability-building for the industry
– Supports investors in accelerated licensing and fast-tracked approvals for locally manufactured APIs

Special Investment Facilitation Council (SIFC)

– Facilitates and fast-tracks foreign and domestic investments
– Provides a streamlined, one-window operation for investor support and coordination across government entities
– Hosted in Prime Minister’s Office



Pakistan Pharma Manufacturers Association (PPMA)

– Represents pharma sector interests
– Focuses on improving industry competitiveness locally and abroad
– Promotes domestic manufacturing of APIs

Special Economic Zones

– Offer fiscal (e.g., tax rebates) and trade benefits
– Ensure robust infrastructure (e.g., electricity stability)

Source: Kearney

C. Investors will benefit from the Government support to create an attractive business and regulatory environment

Key opportunity enablers and incentives

Ease of Doing Business

- Fast-tracked regulatory approvals for local API producers
- Market prices of APIs not regulated
- Ongoing review and simplification / deregulation across sectors

Demand Attractiveness

- Additional import duties on imported APIs that are produced locally to protect domestic manufacturers

Tax & Fiscal Incentives

- Tax breaks and tax holidays
- Permission for API exporters to retain part of export earnings in foreign currency
- Sales tax reduction to 1% on imported API raw materials
- 5-year 0% customs duties on select API input materials, intermediates, manufacturing machinery

Infrastructure Incentives

- Special Economic Zones
  - Guaranteed electricity stability
  - Industrial infrastructure / land incentives
  - *(Planned) Pharma Economic Zone / API industrial park*

National API Industry Promotion Policy

Source: DRAP, SIFC, P3A, other Pakistan Government entities

D. Consequently, investors can expect 18-20% IRR over 30 years of operations, with estimated USD 60Mn in required CAPEX and 70% financing

Estimated project financials and investment case

(Figures provided are estimations based on available information)

Business Case			
Return profile	**Expected IRR**	**18-20%**[1]	– 2-year development period – Computed based on 30-year operations; assumes contracts indexed to USD – Payback period impacted by development period and cash outflows for interest in first 10 years of operations
	Payback Period	**>10 years**[2]	

Operations	**Revenues**[3]	**USD 85-90Mn**
		(PKR 23-26Bn)
			– Initial capacity utilization of 40%, ramping up to 90% over 5 years of operations
			– Assumes an average API price of USD 15,000 per metric ton, triangulated based on:
			  – Open-source API import prices[6]
			  – Benchmarks from current Pakistani API manufacturers (e.g., Citi Pharma)
			  – Assumption that the plant will produce a balanced mix of simpler APIs (e.g., Paracetamol) and more complex ones (e.g., Ciprofloxacin)

	EBITDA Margin[3]	**20-22%**	– Costs assumed: COGS, administrative and general, selling and marketing, all based on expert input
	NOPAT[3,4]	**USD 11-13Mn** (PKR 3.0-3.6Bn)	
Development	**Construction Cost**[5]	**USD 60Mn** (PKR 16.9Bn)	– USD 12,000 CAPEX per metric ton based on expert input (20% of physical infrastructure cost, 35% on utilities and process equipment, 10% on lab equipment, 10% on validation of process and lab equipment, 25% on overheads for construction) – 70% financing of construction – 12-year loan duration (including 2 years grace period), 13% interest (based on offered local bank financing terms)
	Equity Input	**USD 18Mn** (PKR 5.0Bn)	– 30% equity required for development

NOTE: Plant capacity, revenue and cost per kg will depend on final API chosen for production; return profile and margins expected to remain consistent independently of chosen API

1. Computed on 30-year operating period; assumes 4.5x revenue multiple terminal value; 2. Payback period excludes development lead time
3. Run-rate figures after demand stabilization (year 10 of operations / year 12 of contract); 4. NOPAT computed as EBIT * (1-Tax); corporate tax rate of 29% applied
5. Estimated construction cost based on expert input and industry benchmarks

D. Support mechanisms are in place to support the mitigation of potential risks impacting the investment case

Key investment risks and mitigation measures

Risk type	Description	Degree of Risk	Investor Mitigation Actions	Public Sector Support
Demand/ Revenue	Risk of not achieving projected revenues or sales targets due to lower demand or competitive pressure	**Low** – Significant local supply imbalance in Pakistan given limited local API production capabilities; limited local competition	Focus go-to-market on securing contracts with major Pakistani formulation companies to ensure demand; re	Support demand through strong enforcement of regulatory requirements (i.e., localization requirements)
Macroeconomic Conditions	Risk of inflation or currency depreciation affecting profitability	**Medium** – Recent track record of inflation decline (at lowest levels since 1968[1]) pointing to stabilization	Arrange local currency financing for the project	Facilitate access to local currency loans
Supply Chain Risks	High reliance on imported raw materials and inefficient port handling can delay deliveries	**Low** – Pharmaceutical supply chain routes, especially with China and India, are well established given the magnitude of current imports and the size of the industry	Diversify suppliers and build contingency inventory levels of essential raw materials	Ensure fast customs pass-through to avoid spoiled materials; Expand regional trade agreements
Unreliable and Costly Electricity	Unreliable and elevated electricity tariffs affecting investment profitability	**Low** – Electricity prices in Pakistan are above regional ones; however, the government is engaged in several infrastructure projects aimed at power supply stabilization, which helps bring cost down	Explore renewable energy integration to offset grid consumption on the long term	Provide more cost-effective electricity industrial tariffs to ensure investment attractiveness
Regulatory / Legal	Risk of sudden policy changes impacting contract or taxes	**Low** – Recent reforms and deregulation trend suggesting commitment to private sector partnerships	Include independent jurisdiction (e.g., Singapore) in contract; include robust stabilization and early termination clauses in concession contract	Offer legal protections and enable international arbitration where applicable

1. St. Louis Federal Reserve Bank

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APPENDIX

A. Pakistan has reemerged as an investment destination thanks to macroeconomic stability

Pakistan's Economic Turnaround in the News

Pakistan Isn't That Risky Anymore. Its Economy Is a Mini-Miracle. — BARRON'S

Pakistan Economy Grows Faster Than Expected on IMF Aid Boost — Bloomberg

Fitch Upgrades Pakistan to 'B-'; Outlook Stable — FitchRatings

Azerbaijan to invest $2 billion in economic sector of Pakistan — ARAB NEWS

A. Pakistan has a track record of successful Foreign Direct Investments across sectors

Examples of Foreign Direct Investment (FDI) projects in Pakistan

FDI projects (non-exhaustive)

Hangzhou Newsea (China)
USD 50-70Mn

- Joint venture (ETACI Limited) to expand API manufacturing capacity in Pakistan
- USD 50–70Mn investment to add 20–30 new APIs, leveraging Citi Pharma's existing infrastructure; commercial operations expected within 12–18 months

AD Ports (UAE)
USD 220Mn

- 50 year concession agreement to manage, operate and develop the Karachi Gateway Terminal
- USD 200Mn investment in infrastructure development by AD Ports in first 10 years

Al Mirqab Capital (Qatar)
Power Construction Corp. (China) USD 2.09Bn

- Construction of coal-powered power plant in Port Qasim, under build-own-operate (BOO) model
- USD 2.09Bn investment, of which c.a. USD 500Mn in equity

DP World (UAE) and **National Logistics Corp.** (Pakistan) JV investment not public

- Joint venture (DP World: 60%) focused on road freight logistics approved
- Follows MoU by DP World for the development of 50km freight corridor from Karachi Port to Pripri

Air Arabia (UAE) and **Lakson Group** (Pakistan)
JV investment not public

- Air Arabia enters joint venture with Pakistan's Lakson Group to launch low-cost airline Fly Jinnah in 2022
- Operator certificate and license acquired

Other Announcements and MoUs (non-exhaustive)

- Reportage Properties (UAE): JV with Empire Holding Pakistan for USD 300Mn real estate development in Islamabad and Lahore
- Emaar Group (UAE): JV with Giga Group Pakistan for USD 2.4Bn Crescent Bay real estate
- Saudi Development Fund (KSA): Potential investment in mining infrastructure (USD 100Mn)
- Manara Minerals (KSA): Exploring stake in Reko Diq copper and gold mine (USD 7Bn)

B. Potential APIs for Localization

Potential APIs for Localization[1]			
Active Molecule	**WHO EML List?**	**ATC Level 1**	**Locally Manufactured?**
Ibuprofen	Yes	Musculo-skeletal System	Yes (potential for export focus)
Diclofenac	No	Musculo-skeletal System	No
Losartan	Yes	Cardiovascular System	No
Rosuvastatin	No	Cardiovascular System	No
Metformin	Yes	Alimentary Tract and Metabolism	No
Duloxetine	No	Nervous System	No
Atenolol	Yes	Cardiovascular System	No
Tranexamic Acid	Yes	Blood and Blood Forming Organs	No
Potassium Clavulanate	No	Antiinfectives for Systemic Use	No
Gliclazide	Yes	Alimentary Tract and Metabolism	No
Perindopril Tert Butylamine	Yes	Cardiovascular System	No
Trimetazidine	No	Cardiovascular System	No
Indapamide	Yes	Cardiovascular System	No
Ceftriaxone Sodium	Yes	Antiinfectives for Systemic Use	Yes (potential for export focus)
Propranolol	Yes	Cardiovascular System	No
Clarithromycin	Yes	Antiinfectives for Systemic Use	No

1. Based on import data and feedback from Pakistan Pharma Manufacturers Association
Source: DRAP, Pakistan Pharma Manufacturers Association

D. Opportunity P&L

Extract from financial model

(Figures provided are estimations based on available information)

Numbers in USD[1]	Year 1[2]	Year 5[2]	Year 10[2]
Utilization	40%	80%	90%
Estimated Market Capture	3%	5%	4%
Total Revenue	**31,836,240**	**68,921,140**	**85,606,321**
Cost of Operations			
COGS	16,605,327	35,948,280	44,651,031
Administrative & General	3,806,097	8,239,685	10,234,437
Selling & Marketing Expenses	4,693,234	10,160,214	12,619,910
Total OPEX	**25,104,658**	**54,348,179**	**67,505,378**
EBITDA	**6,731,582**	**14,572,961**	**18,100,943**
EBITDA Margin	*21%*	*21%*	*21%*
NOPAT	**3,501,423**	**9,215,398**	**11,880,094**
Financing			
Interest	6,912,583	5,086,985	1,124,203
Debt Outstanding	50,624,782	34,658,221	- 0.00

- Revenue calculation is based assuming a manufacturing capacity of 5,000 mt, an initial average price per mt of USD 15,000 and an annual USD price increase of 2%

- Expert input / industry reports
- Public comparables (e.g.,: DIVISLAB.BO, LAURUSLABS.NS)
- Other desktop research and benchmarking

- Project coverage, loan duration and interest rate provided by local bank
- Debt in Year 1 includes additional interest accrued by not paid during development

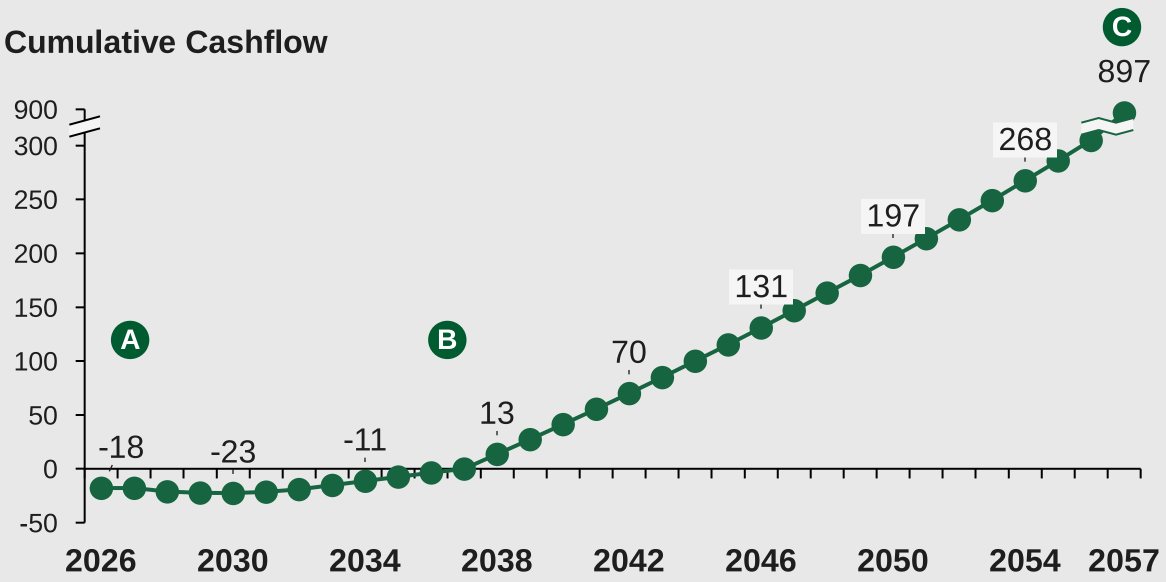
1. Assumes constant currency exchange
2. Operating years, after 2-year development period (i.e., contract years 3, 7, 12)

NOTE: Plant capacity, revenue and cost per kg will depend on final API chosen for production; return profile and margins expected to remain consistent independently of chosen API

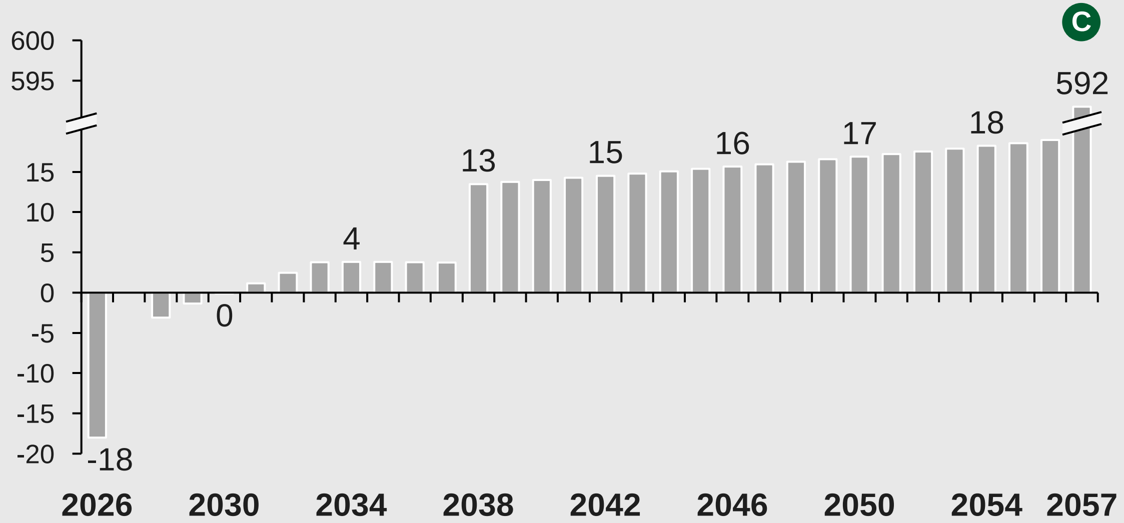
D. Investor Cash Flows

Investor cash flows, USD Mn

Cumulative Cashflow



Yearly Cashflow



Investor cash flows:

– Upfront equity investment: USD 18Mn

– Cumulative cash flows over the duration of the investment: USD 897 Mn (including terminal value)

Additional information:

A Development period: 2 years

B Payback period: year 11 of operations

C Terminal value: USD 572 Mn; computed as 4.5x Revenue multiple

D. P&L Assumptions

Extract from financial model
(Figures provided are estimations based on available information)

Revenue Assumptions		
Assumption	**Unit**	**Value**
Average API Price	**USD / mt**	**15,000**
Manufacturing Plant Capacity	**mt**	**5,000**
Initial Utilization	**%**	**40%**
Incremental Utilization	**%**	**10%**
Final Utilization	**%**	**90%**
Inflation (PKR)	**%**	**2%**

OPEX Assumptions		
Assumption	**Unit**	**Value**
COGS	**% of Revenue**	**52%**
Administrative & General	**% of Revenue**	**12%**
Selling & Marketing Expenses	**% of Revenue**	**15%**

NOTE: Plant capacity, revenue and cost per kg will depend on final API chosen for production; return profile and margins expected to remain consistent independently of chosen API

Source: Expert input, Fitch, DRAP, Company Benchmarks

D. CAPEX assumptions

Extract from financial model

(Figures provided are estimations based on available information)

Total Project Cost			
Assumption		**Unit**	**Value**
CAPEX per Metric Ton		USD CAPEX/ Metric Ton	12,000
Designed Plant Capacity		Metric Ton	5,000
Total CAPEX		USD	60,000,000
CAPEX Breakdown	Construction and Civil Works	%	20%
	Utilities and Process Equipment	%	35%
	Laboratory Equipment	%	10%
	Process and Laboratory Equipment Validation	%	10%
	Construction Overheads	%	25%

NOTE: Plant capacity, revenue and cost per kg will depend on final API chosen for production; return profile expected to remain consistent independent of chosen API

Source: Expert input, regional and global project examples

D. Sensitivity Analysis

API Price vs. CAPEX

API Average Price Differential	CAPEX Differential: -20%	-10%	0%	10%	20%
-20%	18.3%	16.4%	14.9%	13.7%	12.7%
-10%	20.4%	18.3%	16.6%	15.2%	14.1%
0%	22.6%	20.2%	18.3%	16.8%	15.5%
10%	24.8%	22.1%	20.0%	18.3%	16.9%
20%	27.0%	24.1%	21.7%	19.8%	18.3%

IRR is higher than the estimated cost of equity (16%)

Thank You