



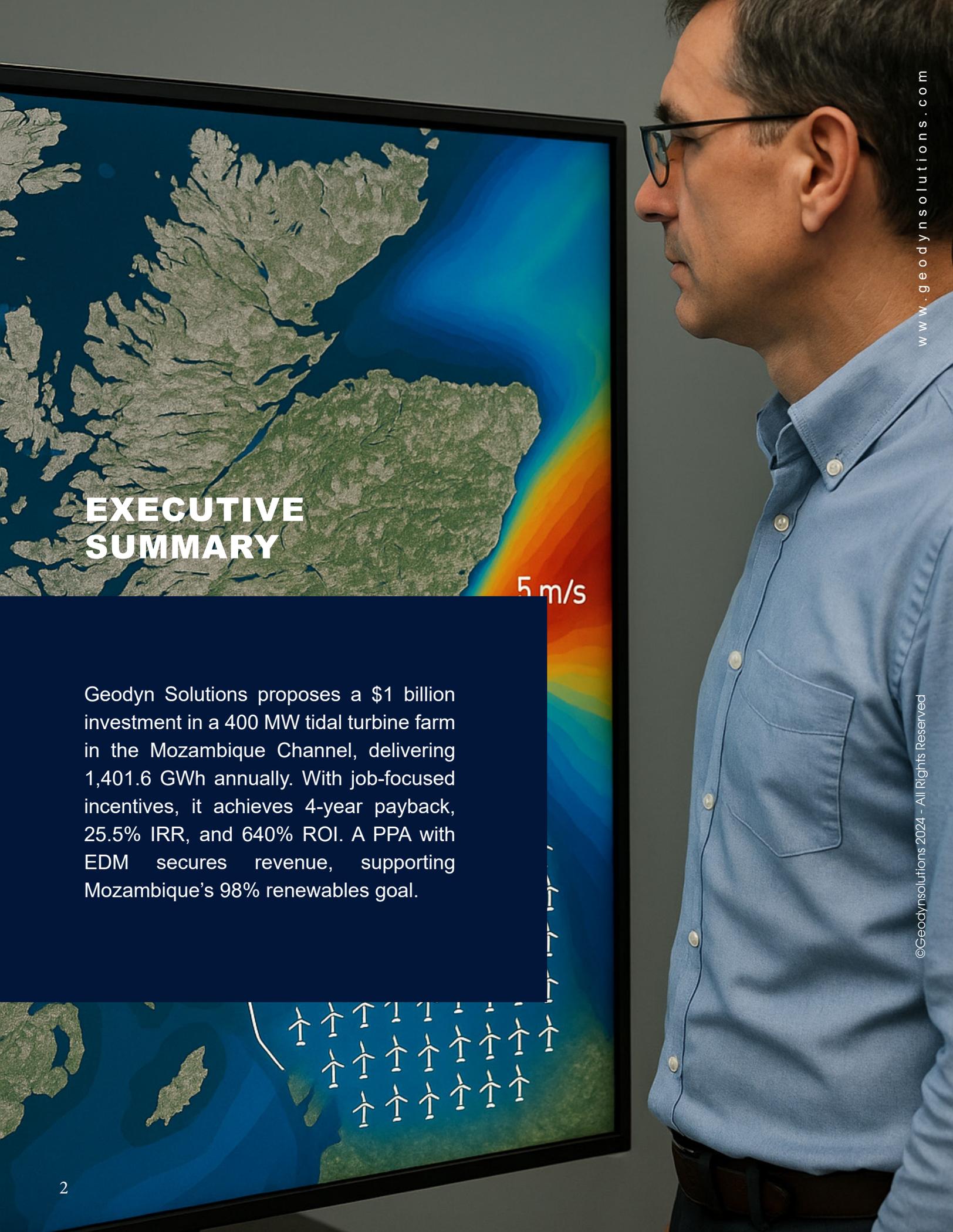
GEODYN
SOLUTIONS



TIDAL TURBINE PROJECT IN MOZAMBIQUE

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EXECUTIVE SUMMARY

Geodyn Solutions proposes a \$1 billion investment in a 400 MW tidal turbine farm in the Mozambique Channel, delivering 1,401.6 GWh annually. With job-focused incentives, it achieves 4-year payback, 25.5% IRR, and 640% ROI. A PPA with EDM secures revenue, supporting Mozambique's 98% renewables goal.

5 m/s



PROJECT OVERVIEW

The project targets the Mozambique Channel, with currents up to 2.5 m/s. The farm will comprise 200 turbines (2 MW each), operational by 2028. Total capacity: 400 MW, producing 1,401.6 GWh annually at 40% factor, powering over 2,260,645 households (based on average Mozambican household consumption of approximately 620 kWh/year), aligning with the country's energy transition strategy aiming for universal access by 2030.

TECHNICAL FEASIBILITY



Tidal turbines harness ocean currents with durable blades and generators, providing predictable power superior to intermittent renewables. Maturity in design ensures resilience in marine environments. Enhanced AI will optimize turbine arrays, predictive maintenance, and yield, boosting efficiency by 25% and reducing downtime. Blockchain enables transparent energy tracking, facilitating tokenized investments for broader participation.

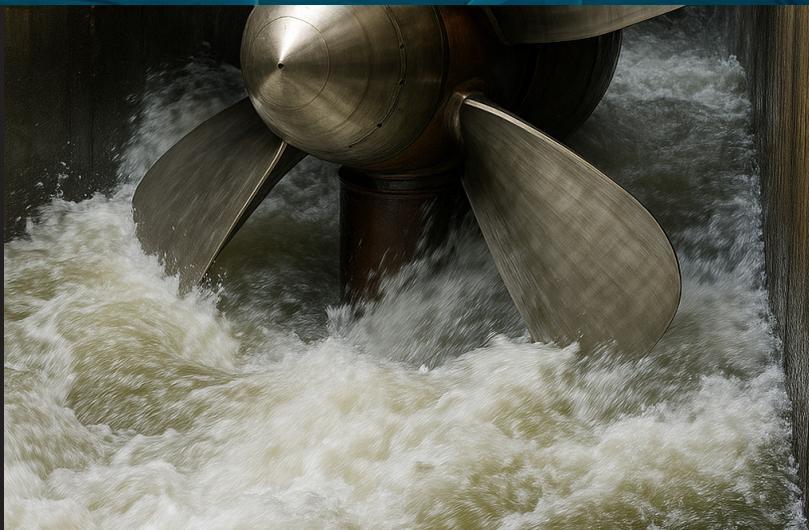
CAPITAL EXPENDITURES (CAPEX)

TOTAL CAPEX: \$1 billion, allocated to turbine procurement (\$400 million), installation and infrastructure (\$350 million), site development and grid connection (\$200 million), and contingencies (\$50 million). Through economies of scale and 30% grants from government programs and World Bank funding, effective CAPEX reduces to \$700 million.



REVENUE DETAILS

ELECTRICITY SALES:
SECURED VIA A 20-YEAR PPA
AT \$160/MWH, YIELDING \$224.26
MILLION ANNUALLY FROM 1,401.6
GWH PRODUCTION.



CARBON CREDITS: ANNUAL
CO₂ SAVINGS OF 981,120 TONS
GENERATE \$14.72 MILLION AT
\$15/TON VIA MOZAMBIQUE'S
DEVELOPING CARBON MARKET.

TOTAL ANNUAL REVENUE:
\$238.98 MILLION, NET OF
OPTIMIZED OPEX.



**OPERATIONAL
EXPENDITURES (OPEX)**

ANNUAL OPEX: \$15 MILLION (1.5% OF CAPEX),
LOWERED VIA AI EFFICIENCIES.

NET ANNUAL CASH FLOW

\$223.98 MILLION.





-981,120 tons
CO₂

RETURN ON INVESTMENT

PAYBACK PERIOD: 4 YEARS.

INTERNAL RATE OF RETURN (IRR): 25.5%.

20-YEAR ROI CHART: THE TABLE BELOW DETAILS ANNUAL AND CUMULATIVE CASH FLOWS, WITH CUMULATIVE ROI AS $(\text{CUMULATIVE CASH FLOW} / \text{EFFECTIVE CAPEX}) \times 100$.

20-YEAR ROI CHART

YEAR	ANNUAL CASH FLOW (USD MILLIONS)	CUMULATIVE CASH FLOW (USD MIL- LIONS)	CUMULATIVE ROI (%)
1	223.98	223.98	32.0
2	223.98	447.96	64.0
3	223.98	671.94	96.0
4	223.98	895.92	128.0
5	223.98	1,119.90	160.0
6	223.98	1,343.88	192.0
7	223.98	1,567.86	224.0
8	223.98	1,791.84	256.0
9	223.98	2,015.82	288.0
10	223.98	2,239.80	320.0
11	223.98	2,463.78	352.0
12	223.98	2,687.76	384.0
13	223.98	2,911.74	416.0
14	223.98	3,135.72	448.0
15	223.98	3,359.70	480.0
16	223.98	3,583.68	512.0
17	223.98	3,807.66	544.0
18	223.98	4,031.64	576.0
19	223.98	4,255.62	608.0
20	223.98	4,479.60	640.0

Over 20 years, the project yields \$4.48 billion in cumulative cash flow.



ENVIRONMENTAL BENEFITS

- THE PROJECT OFFSETS FOSSIL FUEL USE, CUTTING CO₂ EMISSIONS BY 981,120 TONS ANNUALLY—EQUIVALENT TO REMOVING 200,000 CARS FROM ROADS. AI-OPTIMIZED DESIGNS MINIMIZE MARINE IMPACTS, SUPPORTING SUSTAINABLE DEVELOPMENT.





GOVERNMENT GRANTS, INCENTIVES, AND WORLD BANK SUPPORT

- MOZAMBIQUE OFFERS TAX INCENTIVES UNDER THE STRATEGY FOR NEW AND RENEWABLE DEVELOPMENT, INCLUDING EXEMPTIONS FOR RE EQUIPMENT AND CARBON CREDITS VIA REDD+. THE GET FIT PROGRAM SUPPORTS PRIVATE INVESTMENT. THE WORLD BANK PROVIDES UP TO 30% CAPEX FUNDING FOR ENERGY ACCESS PROJECTS.



INNOVATIVE FINANCING FOR OPTIMAL ROI

- **CO₂ BONDS:** ISSUE BONDS LINKED TO EMISSION REDUCTIONS, ATTRACTING GREEN INVESTORS AND PROVIDING UPFRONT CAPITAL BASED ON VERIFIED SAVINGS.



PREDICTIVE MAINTENANCE 25% YIELD BOOST



- **AI OPTIMIZATION:** IMPLEMENT AI FOR DYNAMIC CONTROL, INCREASING YIELD BY 15-25% AND SLASHING OPEX, AMPLIFYING CASH FLOWS.

- **BLOCKCHAIN AND TOKENIZATION:** TOKENIZE ASSETS ON BLOCKCHAIN FOR FRACTIONAL OWNERSHIP, DRAWING GLOBAL INVESTORS AND REDUCING EQUITY NEEDS BY 25%. PROJECT TOKENS DISTRIBUTE DIVIDENDS FROM REVENUE, ENHANCING LIQUIDITY AND ROI THROUGH TRADABLE GREEN ASSETS.





POWER PURCHASE AGREEMENT (PPA)

- A 20-year PPA with EDM guarantees all output purchase at \$160/MWh, inflation-indexed. This provides revenue certainty, with performance clauses ensuring stable cash flows while advancing Mozambique's renewable targets.

20-Year PPA \$160/MWh



THIS OPTIMIZED \$1 BILLION INVESTMENT ELEVATES GEODYN SOLUTIONS' ROLE IN MOZAMBIQUE'S TIDAL ENERGY SECTOR, YIELDING SUPERIOR FINANCIAL RETURNS, ENVIRONMENTAL IMPACT, AND INNOVATION. WITH A 4-YEAR PAYBACK, 25.5% IRR, AND ELEMENTS LIKE AI, BLOCKCHAIN, AND CO2 BONDS, THE PROJECT MAXIMIZES ROI AND SUPPORTS GLOBAL SUSTAINABILITY. PROCEED WITH DETAILED FEASIBILITY AND PARTNERSHIPS.



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