

BD OZ INITIATIVE

The Economic Impact of BDO Zones

Methods, Project-Level Estimates, and 100-Zone National Scaling

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Executive Summary

The purpose of this study is to determine an average economic impact of projects located in BDO Zones based on six case-study projects that have been announced in BDO Zones and are currently in the capital-raise stage. For each project we calculate total economic impact over ten years (2024 USD) and derive an average impact representative of each project located in a BDO Zone.

This analysis utilizes the economic impact framework for biofuels/biomanufacturing described by English, Menard, and Wilson in "*The Economic Impact of a Renewable Biofuels/Energy Industry Supply Chain Using the Renewable Energy Economic Analysis Layers (REEAL) Modeling System*" (2022). Using this method, we present construction (one-time) and operations (annual) impacts with direct, indirect, and induced effects reported separately. Summary tables and figures provide per-project results, a six-project average, and an estimate of the economic impact of 100 BDO Zones based on the observed actualization ratio of projects announced in rated BDO Zones.

*The average annual economic impact to local regional BDO Zone economies is over **$423 million** per BDO Zone project. The average total 10-year cumulative economic impact[1] in BDO Zones is over **$4.2 billion** per BDO Zone project.*

We present Low / Base / High scenarios around national economic impact of 100 BDO Zones based upon various actualization ratios:

Summary 100 BDO Zone National Scaling

Scenario (100 BDO Zones)	Actualization Ratio over 5 years	Annual Impact ($)	10-year Impact ($)
Low Impact	5%	2,116,757,061	21,167,570,614
Base Impact	10%	4,233,514,123	42,335,141,227
High Impact	15%	6,350,271,184	63,502,711,841

[1] Total of direct, indirect and Induced economic impact from one-time plant construction plus steady-state annual operations.

BDO Zones as Economic Development Tools: Thousands of communities across North America possess significant reserves of sustainable biomass capable of supporting biomanufacturing. Catalyzing growth of this sector is key to the goal of market diversification for biomass resources, wildfire mitigation, energy independence and rural prosperity.

A persistent and recognized barrier to efficient market formation is the absence of standardized, quantifiable metrics that convey regional biomass supply-chain readiness to project developers and investors[2]. The Biofuel Development Opportunity (BDO) Zone Initiative addresses this gap with a standardized risk-assessment methodology to identify, validate, and communicate low risk regions where new biomanufacturing plants can be built and reliably supplied.

BDO Zone Ratings certify regional readiness for biomanufacturing and are issued on an A-scale (AAA, AA, A, BBB). These ratings provide a clear, credible signal of a region's suitability to host biomanufacturing and have proven effective in drawing investment to rural areas while advancing decarbonization and job creation.

1. Scope

This paper provides a transparent, credible estimate of the average economic impact of bio-manufacturing plants in BDO Zones. For six projects announced in BDO Zones, we apply the REEAL model to:

1. Calculate total economic impact resulting from investment in plant construction (CAPEX) and annual operation (OPEX);
2. Break down total economic impact into direct, indirect and induced impacts using the relevant BEA sector.
3. For OPEX, breakdown direct, indirect and induced impacts according to salary, feedstock and 'all other' input purchases
4. For employment, calculate direct, indirect, induced as well as total jobs created for both CAPEX and OPEX.
5. Compute a per-project average of economic impacts and provide an illustrative projection of 100 BDO Zones using a low—medium-high actualization ratio over 5 years.

[2] *"Plan to Enable the Bioeconomy in America: Building a Resilient Biomass Supply"*; US Department of Agriculture. March 2024, BDO Zones referenced on *pp.4, 27, 28 and 29*

2. Methodology

This study applies the leading economic impact analysis (EIA) methodological approach for biofuels and biomanufacturing to six recently announced bio-manufacturing projects in BDO Zones in order to gauge the average immediate and 10-year economic impact of a project in a BDO Zone.

Developed at the University of Tennessee's (UT) Department of Agricultural and Resource Economics, the approach is called the ***Renewable Energy Economic Analysis Layers (REEAL) model.*** REEAL models the economic impact of bio/renewable energy technologies. It is utilized by English, Menard, and Wilson in the seminal paper *The Economic Impact of a Renewable Biofuels/Energy Industry Supply Chain Using the Renewable Energy Economic Analysis Layers Modeling System*[3] (2022).

2.1 REEAL Model

UT's Renewable Energy Economic Analysis Layers (REEAL) system is a layered framework that assembles the data needed to quantify the economic impacts of the full biofuels supply chain. The layers include: (i) techno-economic assessment (TEA) spreadsheets for conversion and, where relevant, preprocessing; (ii) enterprise budgets/cost-of-production for feedstocks and transport; and (iii) IMPLAN®[4] regional accounts and multipliers aggregated to the Bureau of Economic Analysis's 179 economic trading areas as modeling regions[5]. These layers provide, for each BDO Zone project, the complete set of expenditures to be allocated across industries and the geographic footprint for regionalization.

Outputs include economic impact resulting from the establishment and production of feedstock, transportation of feedstock to the plant gate, and the one-time investment in plant construction as well as annual operation of a biomanufacturing facility. Construction (one-time) and operations (annual) are modelled as separate events; results are reported as Type II totals (direct + indirect + induced) in 2024 USD.

2.2 TEA and cost inputs

Conversion-pathway TEAs (e.g., alcohol-to-jet, gasification/Fischer–Tropsch, HEFA) supply CAPEX and OPEX by account, material/energy factors, staffing, and co-product outputs

[3] Institute of Agriculture, Department of Agricultural and Resource Economics, University of Tennessee, Knoxville, TN, United States, Frontiers Energy Research 2022
[4] IMPLAN Group LLC (2018) IMPLAN System, Available at: Economic Impact Analysis for Planning
[5] BEAs represent centers of economic activity, recognize both metropolitan and micropolitan statistical areas, and provide information on changes in economic and population growth in the United States.

used in the REEAL Model. The TEAs used assume a baseline 12.2% return on investment in calculating break-even manufacturer's selling prices; the same structure is retained here for conversion accounts. Feedstock/transport enterprise budgets supply stumpage/proprietor income, harvest/chipping, storage/preprocessing (if any), and transport costs.

2.3 Regionalization and IMPLAN

IMPLAN® provides descriptive measures of the economy including total industry output (economic activity or the value of all sales), employment, labor income, value-added, and state/local taxes for 546 industries based on the U.S. Department of Census's North American Industry Classification System (NAICS) in each BEA. Data are aggregated to BEA economic areas and then converted to BEA input–output models to measure changes in economic activity.

The BEA IMPLAN model provides estimates of multiplier-based impacts. In analysis of the impacts of the supply chain activities, the indirect multiplier effect is also included. Multipliers in the model measure the response of the relevant BEA economy to a biomanufacturing plant in a BDO Zone.

IMPLAN models are built at the BEA economic-area scale. Expenditures are not applied as 100% local by default. Instead, LPPs from IMPLAN determine the locally sourced share of each spending line and the leakage that leaves the study region. Using Analysis-by-Parts, each major spending stream is split and mapped to the industries that actually receive it (e.g., construction trades; engineering; logging and chipping; refined chemicals and industrial gases; trucking; professional services). Each ABP part is shocked separately in IMPLAN and later aggregated to obtain total direct, indirect, and induced effects. This preserves sector detail, takes into account local-content constraints, and avoids double-counting.

2.4 Construction vs operations accounting

Construction (one-time): CAPEX is scheduled and assigned to the relevant construction and installation industries; professional services, equipment installation, and owner's costs are included per TEA/REEAL accounts.

Operations (annual): OPEX shocks are decomposed into ABP parts—for plant payroll, feedstock harvest/chipping, stumpage/proprietor income, energy and process inputs, maintenance/MRO, and inbound/outbound transport. Annual steady-state impacts are reported, and a **10-year** roll-up corresponds to the English paper's "10-year impacts" presentation.

2.5 Indicators and reporting

The following indicators are reported: Total Output (gross economic activity), Employment (job-years for construction; annual jobs for operations), Labor Income, and Value Added/GRP. All project tables show direct/indirect/induced components and Type II job totals.

2.6 Scaling factors and reasonableness checks

Where the plant size in one of the six BDO Zone project case studies differ from the TEA baseline, scaling follows the factor approach (i.e., expenditure factors proportional to throughput or investment ratios are applied to preserve TEA/IMPLAN accounting). As a diagnostic, implied multipliers are used only as reasonableness checks on ABP outputs—not to back-solve results.

2.7 Known limitations

Consistent with the REEAL Model utilized in *The Economic Impact of a Renewable Biofuels/Energy Industry Supply Chain Using the Renewable Energy Economic Analysis Layers Modeling System*[6] (English, Menard, and Wilson; 2022) the approach is static and linear: production functions and local content do not endogenously adjust, and capacity constraints and substitution effects are not modeled. In addition, the six projects analyzed for the purposes of this report may not be statistically representative of the type of biomanufacturing project that may be located in other BDO Zones in the future. In order to address this limitation, when making projections on the impact of 100 BDO zones we utilize low-medium-high projection bands.

[6] Institute of Agriculture, Department of Agricultural and Resource Economics, University of Tennessee, Knoxville, TN, United States, Frontiers Energy Research 2022

3. Six Case Study Projects BDO Zones[7]

Project (BDO Zone)	Technology/Feedstock	CAPEX (USD $B)
USA BioEnergy – Bon Wier, TX	FT fuels; woody biomass	**$2.80B**
Provectus Biofuels – Vegreville, AB	SAF; wheat straw	**$0.845B**
Azure Sust. Fuels Corp. – Southeast KS	SAF; corn stover residues / ag oils	**$0.900B**
Yosemite Clean Energy – Butte Co., CA	Green hydrogen; woody biomass	**$0.250B**
Strategic Biofuels – Richland Parish, LA	FT fuels + CCS; woody biomass	**$2.75B**
Velocys – Natchez, MS	SAF FT; woody biomass	**$2.50B**

4. Project-Level Impacts

4.1 Definitions

Direct Outputs capture the economic activity and employment within the biofuels value-chain industries themselves. For construction, this is construction-related industries and professional services tied to the build. For operations, this is the biorefinery and other value-chain stages explicitly modelled as part of operations (i.e., plant payroll, feedstock harvesting/chipping, on-site handling, and facility-level purchases).

Indirect Outputs are the economic, employment and wage impact created by those upstream industries that supply the biofuel value chains, or by individuals who work at the periphery of the sectors (i.e., equipment maintenance, parts and materials, contracting, wholesale, utilities, business services, and third-party transport providers).

Induced Outputs are the economic, employment and wage impact that stems from household spending of the income earned by employees whose wages are supported by the direct and indirect activity in each sector (e.g., spending on housing, food services, retail, health care).

Totals reported in the tables are Type II results (i.e., the sum of direct + indirect + induced effects). Future contributions are expressed in nominal 2024 dollars. All dollars are 2024 USD.

[7] Announced projects in the capital raise stage

4.2 Average Economic Impacts of Projects in BDO Zones: Annual and 10-Year Totals

The results of this study show material economic impacts from the projects on their respective BDO Zones:

- **Average annual economic impact** to local regional BDO Zone economies is over **$423 million per BDO Zone project**.
- **Average total 10-year cumulative economic impact**[8] in BDO Zones is over **$4.2 billion per BDO Zone project**.

Figure 1: *10-Year Total Economic Output: All BDO Zone Projects*

Project (BDO Zone)	Direct Output	Indirect Output	Induced Output	Total Output
USA BioEnergy	$1,957,176,694	$614,210,414	$801,820,752	**$3,373,207,860**
Provectus Biofuels	$4,488,324,924	$1,001,215,846	$1,347,820,958	**$6,837,361,728**
Azure Sust. Fuels Corp	$1,210,294,850	$407,190,598	$416,604,024	**$2,034,089,471**
Yosemite Clean Energy	$875,456,399	$295,245,679	$399,484,194	**$1,570,186,271**
Strategic Biofuels	$3,644,343,112	$1,200,535,619	$1,290,383,567	**$6,135,262,297**
Velocys	$3,175,519,916	$1,211,363,220	$1,064,093,973	**$5,450,977,108**
Average Total 10-Year Cumulative Economic Impact Per Project				**$4,233,514,123**
Average Total Yearly Economic Impact Per Project				**$423,351,412**

[8] Total of direct, indirect and Induced economic impact from one-time plant construction plus steady-state annual operations.

4.3 Project Specific Economic Impacts

Provectus Biofuels

Provectus Biofuels (Vegreville, AB): Construction (CAPEX) is estimated to support 5,639 total employment (Direct, Indirect and Induced) and generate $928.4M in one-time total output. Steady-state operations (OPEX) are estimated to sustain 1,376 total jobs per year and produce $244.5M per year in total output**.** Over a 10-year operating horizon, **OPEX economic impacts are $2.445B.** Combined with one-time CAPEX, **the 10-year total economic output is projected to be $3.373B**.

Figure 2: *Annual Economic Impact and Employment: Provectus Project*

Provectus Biofuels (proposed) | Vegreville, AB BDO Zone

Economic impacts resulting from investment (CAPEX) and annual operation (OPEX) modeled using BEA 55.

	Economic Impacts – Total Output ($)				Jobs			
Item	Direct	Indirect	Induced	**Total $**	Direct	Indirect	Induced	**Total Jobs**
CAPEX	540,043,571	170,557,944	217,778,680	**928,380,194**	450	3,715	1,474	**5,639**
OPEX	141,713,312	44,365,247	58,404,207	**244,482,767**	155	827	395	**1,376**
	Annual Impacts							
OPEX (input purchases incl. ROI except for salary / feedstock costs)	124,959,768	41,334,428	45,785,216	212,079,412	0	809	310	1,119
Salary	9,054,961	0	9,506,376	18,561,337	100	0	64	164
Feedstock	7,698,584	3,030,819	3,112,615	13,842,018	55	19	21	94
Total OPEX	**141,713,312**	**44,365,247**	**58,404,207**	**244,482,767**	**155**	**827**	**395**	**1376**

Figure 3: *10-Year Economic Impact and Employment: Provectus Project*

Economic impacts to the BEA 55 over a 10-year period for the proposed Provectus facility

Item	Economic Impacts 2024$			
	Direct	Indirect	Induced	**Total**
OPEX over 10 years (1)	1,417,133,123	443,652,470	584,042,072	**2,444,827,666**
CAPEX	540,043,571	170,557,944	217,778,680	**928,380,194**
Total	**1,957,176,694**	**614,210,414**	**801,820,752**	**3,373,207,860**

USA BioEnergy

USA BioEnergy (Bon Wier, TX): Construction (CAPEX) is estimated to support 14,996 total employment (Direct, Indirect and Induced) and generate $2.468B in one-time total output. Steady-state operations (OPEX) are estimated to sustain 2,195 total jobs per year and produce $436.9M per year in total output**.** Over a 10-year operating horizon, **OPEX economic impacts are $4.369B.** Combined with one-time CAPEX, **the 10-year total economic output is projected to be $6.837B**.

Figure 4: *Annual Economic Impact and Employment: USA BioEnergy Project*

USA BioEnergy Project (proposed) | Bon Wier, TX BDA Zone

Economic impacts resulting from investment (CAPEX) and annual operation (OPEX) in BEA 16.

	Economic Impacts – Total Output ($)				Jobs			
Construction Impact	Direct	Indirect	Induced	Total $	Direct	Indirect	Induced	Total Jobs
CAPEX	1,656,333,825	357,435,958	454,372,043	**2,468,141,826**	1,000	10,747	3,249	**14,996**
OPEX	283,199,110	64,377,989	89,344,891	**436,921,990**	347	1,210	639	**2,195**
	Annual Impacts							
OPEX (input purchases incl. ROI except for salary / feedstock costs)	248,970,373	59,692,682	70,824,489	379,487,545	0	1,181	506	1,688
Salary	18,109,822	0	13,704,378	31,814,299	200	0	98	298
Feedstock	16,118,815	4,685,307	4,816,025	25,620,146	147	29	34	210
Total OPEX	**283,199,110**	**64,377,989**	**89,344,891**	**436,921,990**	**347**	**1,210**	**639**	**2,195**

Figure 5: *10-Year Economic Impact and Employment: USA BioEnergy Project*

Economic impacts to the BEA 16 over a 10-year period for the proposed USA BioEnergy facility

Item	Economic Impacts 2024$			
	Direct	Indirect	Induced	Total
OPEX over 10 years (1)	2,831,991,099	643,779,889	893,448,915	**4,369,219,902**
CAPEX	1,656,333,825	357,435,958	454,372,043	**2,468,141,826**
Total	**4,488,324,924**	**1,001,215,846**	**1,347,820,958**	**6,837,361,728**

Azure Sustainable Fuels

Azure SAF Facility (SE Kansas): Construction (CAPEX) is estimated to support 1,861 total employment (Direct, Indirect and Induced) and generate $292.9M in one-time total output. Steady-state operations (OPEX) are estimated to sustain 1,054 total jobs per year and produce $174.1M per year in total output**.** Over a 10-year operating horizon, **OPEX economic impacts are $1.741B.** Combined with one-time CAPEX, **the 10-year total economic output is projected to be $2.034B**.

Figure 6: *Annual Economic Impact and Employment: Azure SAF Project*

Azure SAF Project (proposed) | Southeast KS BDO Zone

Economic impacts resulting from investment (CAPEX) and annual operation (OPEX) in BEA 179.

	Economic Impacts – Total Output ($)				Jobs			
Item	Direct	Indirect	Induced	Total $	Direct	Indirect	Induced	Total Jobs
CAPEX	183,433,718	53,701,836	55,801,528	**292,937,083**	1,500	-35	396	**1,861**
OPEX	102,686,113	35,348,876	36,080,250	**174,115,239**	593	207	255	**1,054**
	Annual Impacts							
OPEX (input purchases incl. ROI except for salary / feedstock costs)	33,501,870	12,577,490	9,510,801	55,590,160	0	60	68	127
Salary	9,169,780	0	7,918,772	17,088,553	150	0	55	205
Feedstock	60,014,463	22,771,387	18,650,677	101,436,526	443	147	132	722
Total OPEX	**102,686,113**	**35,348,876**	**36,080,250**	**174,115,239**	**593**	**207**	**255**	**1,054**

Figure 7: *10-Year Economic Impact and Employment: Azure SAF Project*

Economic impacts to the BEA 179 over a 10-year period for the proposed Azure facility

Item	Economic Impacts 2024$			
	Direct	Indirect	Induced	Total
OPEX over 10 years (1)	1,026,861,132	353,488,761	360,802,496	**1,741,152,389**
CAPEX	183,433,718	53,701,836	55,801,528	**292,937,083**
Total	**1,210,294,850**	**407,190,598**	**416,604,024**	**2,034,089,471**

Yosemite Clean Energy

Yosemite Facility (Butte County, CA): Construction (CAPEX) is estimated to support 1,531 total employment (Direct, Indirect and Induced) and generate $264.8M in one-time total output. Steady-state operations (OPEX) are estimated to sustain 681 total jobs per year and produce $130.5M per year in total output**.** Over a 10-year operating horizon, **OPEX economic impacts are $1.305B.** Combined with one-time CAPEX, **the 10-year total economic output is projected to be $1.570B**.

Figure 8: *Annual Economic Impact and Employment: Yosemite Project*

Yosemite Green Hydrogen (proposed) | Butte County, CA BDO Zone

Economic impacts resulting from investment (CAPEX) and annual operation (OPEX) using BEA 140.

	Economic Impacts – Total Output ($)				Jobs			
Item	Direct	Indirect	Induced	**Total $**	Direct	Indirect	Induced	**Total Jobs**
CAPEX	153,907,210	46,410,166	64,526,738	**264,844,115**	150	985	396	**1,531**
OPEX	72,154,919	24,883,551	33,495,746	**130,534,216**	72	403	205	**681**
	Annual Impacts							
OPEX (input purchases incl. ROI except for salary / feedstock costs)	64,684,949	24,070,501	27,204,880	115,960,331	0	399	167	566
Salary	4,980,228	0	5,019,283	9,999,511	55	0	31	86
Feedstock	2,489,741	813,051	1,271,582	4,574,374	17	5	8	30
Total OPEX	**72,154,919**	**24,883,551**	**33,495,746**	**130,534,216**	**72**	**403**	**205**	**681**

Figure 9: *10-Year Economic Impact and Employment: Yosemite Project*

Economic impacts to the BEA 179 over a 10-year period for the proposed Yosemite facility

Item	Economic Impacts 2024$			
	Direct	Indirect	Induced	Total
OPEX over 10 years (1)	721,549,189	248,835,512	334,957,456	**1,305,342,157**
CAPEX	153,907,210	46,410,166	64,526,738	**264,844,115**
Total	**875,456,399**	**295,245,679**	**399,484,194**	**1,570,186,271**

Strategic Biofuels

Strategic Biofuels Facility (Richland Parish, LA): Construction (CAPEX) is estimated to support 21,484 total employment (Direct, Indirect and Induced) and generate $3.049B in one-time total output. Steady-state operations (OPEX) are estimated to sustain 2,091 total jobs per year and produce $308.6M per year in total output**.** Over a 10-year operating horizon, **OPEX economic impacts are $3.085B.** Combined with one-time CAPEX, **the 10-year total economic output is projected to be $6.135B**.

Figure 10: *Annual Economic Impact and Employment: Strategic Biofuels Project*

Strategic Biofuels (proposed) | Richland Parrish, LA BDO Zone

Economic impacts resulting from investment (CAPEX) and annual operation (OPEX) using BEA 113.

	Economic Impacts – Total Output ($)				Jobs			
Item	Direct	Indirect	Induced	Total $	Direct	Indirect	Induced	Total Jobs
CAPEX	1,781,521,089	643,514,444	624,362,452	**3,049,397,985**	1500	15,276	4,708	**21,484**
OPEX	186,282,202	55,702,117	66,602,111	**308,586,431**	656	933	502	**2,091**
	Annual Impacts							
OPEX (input purchases incl. ROI except for salary / feedstock costs)	128,391,806	37,116,295	42,221,455	207,729.556	0	808	319	1,127
Salary	9,054,961	0	8,681,263	17,736,197	150	0	65	215
Feedstock	48,835,435	18,585,822	15,699,421	83,120,678	506	125	118	749
Total OPEX	**186,282,202**	**55,702,117**	**66,602,111**	**308,586,431**	**656**	**933**	**502**	**2,091**

Figure 11: *10-Year Economic Impact and Employment: Strategic Biofuels Project*

Economic impacts to the BEA 80 over a 10-year period for the proposed Strategic Biofuels facility

Item	Economic Impacts 2024$			
	Direct	Indirect	Induced	Total
OPEX over 10 years (1)	1,862,822,023	557,021,175	666,021,115	**3,085,864,312**
CAPEX	1,781,521,089	643,514,444	624,362,452	**3,049,397,985**
Total	**3,644,343,112**	**1,200,535,619**	**1,290,383,567**	**6,135,262,297**

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Velocys

Velocys Facility (Natchez, MS): Construction (CAPEX) is estimated to support 17,268 total employment (Direct, Indirect and Induced) and generate $2.555B in one-time total output. Steady-state operations (OPEX) are estimated to sustain 1,761 total jobs per year and produce $289.5M per year in total output**.** Over a 10-year operating horizon, **OPEX economic impacts are $2.895B.** Combined with one-time CAPEX, **the 10-year total economic output is projected to be $5.450B**.

Figure 12: *Annual Economic Impact and Employment: Velocys Project*

Velocys (proposed) | Natchez, MS BDO Zone

Economic impacts resulting from investment (CAPEX) and annual operation (OPEX) modeled using BEA 80.

	Economic Impacts – Total Output ($)				Jobs			
Item	Direct	Indirect	Induced	Total $	Direct	Indirect	Induced	Total Jobs
CAPEX	1,505,206,258	564,251,815	486,135,668	**2,555,593,742**	1,200	12,716	3,352	**17,268**
OPEX	167,031,366	64,711,140	57,795,830	**289,538,337**	358	1,005	398	**1,761**
	Annual Impacts							
OPEX (input purchases incl. ROI except for salary / feedstock costs)	129,256,559	53,494,638	38,824,652	221,575,848	0	930	269	1,199
Salary	9,054,961	0	8,714,422	17,769,383	100	0	60	160
Feedstock	28,719,846	11,216,503	10,256,757	50,193,106	258	75	69	403
Total OPEX	**167,031,366**	**64,711,140**	**57,795,830**	**289,538,337**	**358**	**1,005**	**398**	**1,761**

Figure 13: *10-Year Economic Impact and Employment: Velocys Project*

Economic impacts to the BEA 80 over a 10-year period for the proposed Velocys facility

Item	Economic Impacts 2024$			
	Direct	Indirect	Induced	Total
OPEX over 10 years (1)	1,670,313,658	647,111,404	577,958,305	**2,895,383,367**
CAPEX	1,505,206,258	564,251,815	486,135,668	**2,555,593,742**
Total	**3,175,519,916**	**1,211,363,220**	**1,064,093,973**	**5,450,977,108**

5. 100-Zone Projection (5%-10%-15% Actualization)

We present **low, base, and high scenarios** around national economic impact of 100 BDO Zones by varying the actualization ratio (the ratio of BDO Zones to projects announced in BDO Zones) over 5 years at 5%–10%–15% from of time of issue of a BDO Zone rating.[9]

Summary 100 BDO Zone National Scaling

Scenario 100 BDO Zones	Actualization Ratio Over 5 Years	Annual Impact	10-Year Impact
Low Impact	5%	$2,116,757,061	$21,167,570,614
Base Impact	10%	$4,233,514,123	$42,335,141,227
High Impact	15%	$6,350,271,184	$63,502,711,841

STUDY NOTES

REEAL BDO Zone model is available on request.

Contact: info@bdozone.org

[9] Current actualization ratio of projects in BDO Zone over 2-3 years post rating issue is ~10%. Project actualization ratio should realistically increase over a 5-years period post-rating issue.