OYSIPA

OYO STATE INVESTMENT AND PUBLIC PRIVATE PARTNERSHIP AGENCY

CLIMATE SCREENING ASSESSMENT FOR PPP PROJECTS

Project 1: Bola Ige International Market Redevelopment Project

Section 1 – Project Information

No	Item	Description
1	**Project Name**	Bola Ige International Market Redevelopment Project
2	**Location**	Ibadan, Oyo State, Nigeria
3	**Sector / Category**	Urban Infrastructure, Market Redevelopment
4	**Estimated Cost**	₦ 350,800,609.20
5	**Expected Duration**	2 – 4 years (phased)
6	**Mapped NCCP Theme**	Industry & Commerce, Human Settlements, Urban Infrastructure, Circular Economy, Disaster-Risk Management
7	**Rationale for Theme Mapping**	Large public markets influence settlement patterns, commerce and waste flows which are key focus areas under NCCP adaptation & mitigation policy plans.
8	**Purpose Statement**	*Redevelop and climate-proof one of Ibadan's largest markets to serve > 5 000 micro-traders, enhance food-distribution efficiency, and drive inclusive growth through resilient infrastructure, improved sanitation, renewable energy and circular-waste systems.*

Section 2 – Climate-Related Risks

Climate Risk	Likelihood	Potential Impact
Flooding from heavy rainfall & poor drainage	**High**	Stall damage, trading disruption, product losses
Urban heat-stress	**Very High**	Uncomfortable shopping environment, health incidents, higher cooling demand
Storms & high-wind events	**High**	Roof and façade damage, safety hazards
Water scarcity / drought periods	**Medium**	Sanitation issues, cooling-system outages
Soil erosion & ground instability	**Moderate**	Foundation undermining, construction delays

Power outages during extreme weather	**High**	Business-hour losses, food-spoilage in cold-rooms

Existing Mitigation Measures

- Upgraded, over-sized drainage channels & flood-barriers
- Passive-cool design (ventilation stacks, high-albedo roofs, shading canopies)
- Wind-resistant roofing & reinforced walls
- Rain-water harvesting tanks and water-efficient fixtures
- Geotechnical surveys, site grading & retaining walls
- Solar-backup and battery storage for critical loads

Section 3 – Climate-Related Opportunities

Opportunity	Likelihood	Benefits
Rooftop solar-PV arrays	Likely	Cuts energy bills & emissions; powers cold-storage
Green infrastructure & bioswales	Likely	Storm-water control; urban-heat reduction
Rain-water & grey-water reuse	Likely	Reduces municipal-water dependency
Circular waste-segregation & compost hubs	Likely	Diverts organic waste, lowers methane, creates jobs
Covered, ventilated walkways	Likely	Shopper comfort; weather-proof trading aisles

Section 4 – Climate Resilience & Adaptation

- **Flood-resilient layout** – raised platform levels, permeable paving, detention ponds
- **Energy efficiency** – daylighting, LED luminaires, passive ventilation, cool roofs
- **Storm-proofing** – wind-rated trusses, secure cladding, protected signage
- **Water conservation** – low-flow taps, dual-plumbing, 300 m^3 rain-water cisterns
- **Scalable design** – solar array and drainage capacity sized for future climate scenarios
- **Monitoring** – annual infrastructure audits; IoT sensors for energy & water use

Section 5 – Stakeholder Engagement

- **Local trader associations** consulted on layout, stall sizing, waste rules
- **Environmental NGOs & urban planners** involved in green-infrastructure design

- **Public-awareness campaigns** for merchants on climate-risk preparedness
- **Climate-resilience taskforce**: Oyo State agencies, community leaders & engineers

Section 6 – Additional Information

- **Heat-island mitigation**: extensive tree-canopy and rooftop gardens
- **Social-resilience initiatives**: micro-credit & climate-insurance schemes for traders
- **Potential to tap green-bond financing** given clear adaptation-/mitigation profile

Section 7 – Integrated NCCP Actions

NCCP Directive	**Embedded Project Action**
Build **flood-resilient urban infrastructure**	Elevated trading floors, bioswales, permeable pavements
Promote **energy efficiency & renewables**	Solar-PV roofing, natural ventilation, LED lighting
Advance **circular economy**	Decentralised waste-sorting & composting stations
Strengthen **economic inclusion**	Climate-insurance, affordable stall leases, MSME support
Align with **disaster-risk management** guidelines	Early-warning signage, evacuation routes, emergency-power

Section 8 – Alignment with National Climate Policy (NCCP) & Nationally Determined Contributions (NDCs) under the Paris Agreement

Adaptation Alignment (NCCP 2021)

NCCP Target (Excerpt)	**Market Contribution**
Climate-proof public markets & trading centers	Raised floors, flood-channels, bioswales, early-warning signage
Enhance resilience of public spaces to flood & heat stress	Cool-roof canopies, shaded stalls, permeable surfaces
Promote circular-economy practices to reduce urban pollution	Waste-segregation bays, on-site composting, recycling kiosks

Mitigation Alignment (Nigeria's NDCs)

NDC Goal	Market Contribution
"Reduce energy demand in public infrastructure."	Passive cooling, LED lighting, daylighting
"Encourage off-grid renewables in commercial zones."	Rooftop solar-PV powering lighting, cold-rooms & POS systems

SDG Co-Benefits

SDG	Project Contribution
SDG 8 – Decent Work & Economic Growth	Improves livelihood resilience for > 5 000 small traders
SDG 11 – Sustainable Cities & Communities	Modernises core urban infrastructure with inclusive design
SDG 12 – Responsible Consumption & Production	Embeds low-waste value chains
SDG 13 – Climate Action	Reduces vulnerability & integrates mitigation features

Monitoring & Verification (MRV)

Indicator	Target
Market stalls served by renewable energy	**≥ 30 %**
Time to resume trading after a flood event	**< 6 hours**
Number of climate-resilient features integrated (e.g., shaded areas, permeable paving)	**≥ 5 types**
Waste processed through composting or recycling	**≥ 40 % of total market waste**

Project 2: Yekini Adeojo Government Residential Reserved Area (G-RRA)

Section 1 – Project Information

No	Item	Description
1	**Project Name**	Yekini Adeojo Government Residential Reserved Area Project (PPP)
2	**Location**	Ibadan, Oyo State, Nigeria
3	**Sector / Category**	Urban Infrastructure – Residential / Real-Estate
4	**Estimated Cost**	₦15 billion (≈ 400 serviced plots, internal roads, 500 kW mini-grid, drainage, waste-/water systems)
5	**Expected Duration**	2 – 3 years (phased construction)
6	**Mapped NCCP Theme**	**Human Settlements & Urban Infrastructure** – identified by NCCP as a priority climate-vulnerable sector
7	**Rationale for Theme Mapping**	The project reshapes land-use, housing quality and basic services—direct mandates of NCCP § 5 (Adaptation) for resilient settlements.
8	**Purpose Statement**	*Create a climate-smart, middle-income neighbourhood (~2 000 residents) with flood-safe layouts, 500 kW solar mini-grid, circular-waste hubs and green corridors that cut emissions, curb heat and safeguard livelihoods.*

Section 2 – Climate-Related Risks

Climate Risk	Likelihood	Potential Impact
Pluvial & fluvial flooding	**High**	Road/home inundation, health hazards
Urban heat-island effect	**High**	Higher cooling demand, discomfort
Seasonal water scarcity	**Medium**	Potable-water strain
Soil erosion & slope failure	**Moderate**	Foundation risks
Storm / wind damage	**Likely**	Roof/facade damage, delays

Current Mitigation Measures: raised road crowns, oversize drains, cool roofs, tree planting, rain-harvest, geotechnical design, wind-rated roofing.

Section 3 – Climate-Related Opportunities

Opportunity	Likelihood	Benefits
500 kW **solar-PV mini-grid**	Likely	≥ 70 % dwellings powered by renewables
Green corridors / urban trees	Likely	Cooler micro-climate, biodiversity
Grey- & rain-water reuse	Likely	≥ 40 % cut in potable demand
Circular waste-to-compost hubs	Likely	Methane cuts, green jobs

Section 4 – Climate Resilience & Adaptation

- Flood-safe design**:** elevated plots, pervious roads, detention ponds (aligns with NCCP settlement resilience).
- Passive-cool code: high-reflective power roofs, mandatory shade trees .
- **Decentralized 500 kW mini-grid** for power security (NCCP promotes mini-grids) .
- **Water-efficiency package:** dual-plumbing, rain/grey reuse .
- Annual climate-risk audits; scalable drainage & PV capacity.

Section 5 – Stakeholder Engagement

- Community consultations & gender-responsive planning (human-settlement principle) .
- Workshops with city planners, utilities and RESCO.
- Residents' association to co-manage green corridors & waste hubs.

Section 6 – Additional Information

- Opportunity to issue an **Oyo State green-bond** for the mini-grid and drainage upgrades, echoing NCCP's climate-finance strategy.
- Pilot **ICT dashboard** for transparent climate-performance monitoring (NCCP calls for M&E).

Section 7 – Integrated NCCP Actions

NCCP Directive	Embedded Project Action
Strengthen socially inclusive, climate-proof **human settlements**	Elevated plots, pervious pavements, detention ponds
Promote **de-centralized energy systems / mini-grids**	500 kW solar-plus-battery estate mini-grid
Advance **circular-economy** waste solutions	Estate waste segregation & compost hub
Energy-efficiency in buildings	Passive orientation, LED street-lighting
Mobilize **private green-finance** (green bonds)	PPP equity tranche & potential sub-national green bond

Section 8 – Alignment with National Climate Policy & NDCs

Adaptation Alignment (NCCP 2021)

NCCP Target (Excerpt)	GRRA Contribution
"Climate-proof new human settlements, integrating flood-resilient design."	Elevated road crowns & plot levels; silt-guarded drains; pervious pavements; detention ponds
"Mainstream water-efficient technologies in urban housing."	Dual-plumbing, rain-/grey-water re-use, low-flow fixtures, drought-tolerant landscaping
"Promote cool, livable urban environments."	Tree-lined streets, green rooftops, high-albedo roofs, shaded pedestrian ways

Mitigation Alignment (Nigeria's NDCs)

NDC Goal	GRRA Contribution
"Increase renewable-energy share in residential electricity."	500 kW community solar-PV mini-grid + rooftop net-metering; battery backup to displace diesel gensets
"Improve building energy efficiency by 20 % by 2030."	Green-building code: orientation, insulation, natural ventilation, LED lighting

SDG Co-Benefits

- **SDG 11** – resilient, inclusive neighborhood
- **SDG 7** – clean, affordable energy
- **SDG 6** – water stewardship
- **SDG 13** – integrated climate action

Monitoring & Verification (MRV)

Indicator	**2028 Target**
Dwellings powered ≥ 50 % by renewables	**≥ 70 %**
Potable-water demand reduction vs BAU	**≥ 40 %**
Indoor temp exceedance ≥ 28 °C without AC	**≤ 5 days yr^{-1}**
Road access restored after 100 mm rain	**< 4 h**
Avoided CO_2e vs BAU	**≥ 1 200 t yr^{-1}**

Project 3: Cashew Plantation Concession & Development Project

Section 1 – Project Information

No	Item	Description
1	**Project Name**	Cashew Plantation Concession & Development Project (PPP)
2	**Location**	Eruwa, Oyo State, Nigeria
3	**Sector / Category**	Agriculture – Plantation & Agro-Processing
4	**Estimated Cost**	₦ 75 million
5	**Expected Duration**	5 – 10 years (tree establishment → first yields in ≈ 3–5 yrs)
6	**Mapped NCCP Theme**	**Agriculture, Forestry & Other Land-Use (AFOLU)**
7	**Rationale for Theme Mapping**	Plantation agriculture is singled out in NCCP § 4.1 as both highly climate-vulnerable and a major mitigation lever through climate-smart farming & carbon sinks.
8	**Purpose Statement**	*Develop a 5 000 ha climate-smart cashew estate that boosts farmer livelihoods, sequesters carbon, and supplies value-added processing—using drought-tolerant varieties, solar-powered drip irrigation and agro-forestry belts.*

Section 2 – Climate-Related Risks

Climate Risk	Likelihood	Potential Impact
Drought / water scarcity	**Likely**	Irrigation shortfalls, yield loss
Flooding (wet-season)	**Possible**	Seedling loss, soil erosion
Heat-stress	**Likely**	Fruit drop, quality decline
Pests & diseases	**Likely**	Higher infestation pressure
Soil erosion	**Moderate**	Long-term soil fertility loss

Current Mitigation Measures – drip irrigation, raised beds & drains, heat-resistant cultivars, integrated pest management, cover-crop mulching.

Section 3 – Climate-Related Opportunities

Opportunity	Likelihood	Benefits
Solar-powered irrigation	Likely	Lower OPEX, off-grid energy
Climate-resilient cashew varieties	Likely	Stable yields under heat/drought
Agro-forestry belts	Likely	Biodiversity, shade, soil carbon
Carbon-credit revenue	Likely	Extra income via sequestration
Local agro-processing	Likely	Value-addition jobs, reduced waste

Existing actions to harness these: solar pumps planned; R&D with agri-institutes on varieties; layout integrates agro-forestry; carbon-credit certification partners engaged; processing unit design underway.

Section 4 – Climate Resilience & Adaptation

- **Efficient water systems** – drip lines, 50 000 m³ rain-harvest ponds.
- **Drainage & raised beds** against floods.
- **Shade-tree agro-forestry** to buffer heat & wind.
- **Contour farming & mulches** to halt erosion.
- **Adaptive management** – annual climate-risk audits; scalable irrigation & shelter-belt density.

Section 5 – Stakeholder Engagement

- **Community consultations** with Eruwa farmers & leaders.
- **Advisory panel** of agri-researchers & extension officers.
- **Training programmes** on CSA & drip maintenance for local workers.

Section 6 – Additional Information

- Plan to pursue **sustainability certification** for export markets.
- Integration with **Oyo State agri-development plans** .

Section 7 – Integrated NCCP Actions

NCCP Directive	Embedded Project Action
Promote climate-smart, gender-responsive agriculture	Climate-smart cashew varieties; women-led out-grower schemes
Increase soil carbon sequestration in agricultural lands	Mulching, cover-crops, minimal tillage
Promote agro-forestry & reforestation	10 m shelter-belt & nitrogen-fixing trees every 5 rows
Private climate-finance mobilization	Carbon-credit certification & green-agri investment fund

Section 8 – Alignment with NCCP (2021) & Nigeria's NDCs

Adaptation Alignment (NCCP 2021)

NCCP Target (Excerpt)	Project Contribution
"Strengthen climate-smart agriculture among small-holder farmers."	Drip irrigation, drought-tolerant cashew, farmer CSA training.
"Increase soil carbon sequestration in agricultural lands."	Agro-forestry belts; organic mulches; cover crops.
"Promote agro-forestry and community-based forest management."	Inter-row tree planting and community-managed shelter belts.

Mitigation Alignment (Nigeria's NDCs)

NDC / AFOLU Goal	Project Contribution
Reduce GHG intensity of agriculture while enhancing sinks.	Target ≥ 2 t CO_2e ha^{-1} yr^{-1} sequestration via tree biomass & soil carbon.
Expand renewable-energy use in agro-processing.	Solar-powered pumps & shell-waste biomass dryer cut diesel use by ≥ 60 %.

SDG Co-Benefits

SDG	Contribution
SDG 2 – Zero Hunger	Higher yields, resilient supply chain
SDG 8 – Decent Work	300 local jobs in farming & processing
SDG 12 – Responsible Consumption	Low-waste value chain, by-product utilisation
SDG 13 – Climate Action	Integrated CSA & carbon sequestration

Monitoring & Verification (MRV)

Indicator	2030 Target
Area under climate-smart practices	**≥ 90 % estate**
Annual CO_2e sequestered	**≥ 10 000 t**
Yield variability (CV)	**≤ 15 %**
Share of irrigation energy from solar	**≥ 60 %**
Agro-processing powered by renewables / biomass	**≥ 50 %**

Project 4; Aviation Fuel Facility Development Project

Section 1 – Project Information

No	Item	Description
1	**Project Name**	Aviation Fuel Facility Development Project
2	**Location**	Airport premises, Ibadan, Oyo State, Nigeria (exact site TBD)
3	**Sector / Category**	Infrastructure – Aviation Energy / Downstream Oil-&-Gas
4	**Estimated Cost**	₦ 1 207 678 540.38 – includes 10-20 million-litre tank-farm, pipe-/tanker loading racks & 1 MW rooftop PV
5	**Expected Duration**	3 – 5 years (design to commissioning; 25 + yr design-life)
6	**Mapped NCCP Theme**	**Energy / Oil & Gas**
7	**Rationale for Theme Mapping**	Jet-fuel storage & distribution fall directly under NCCP § 4.5 "Oil & Gas" priorities for low-emission, climate-proof energy supply.
8	**Purpose Statement**	*Develop a modern, safety-compliant aviation-fuel hub (10–20 ML capacity) that secures airport energy needs, minimises fugitive emissions, embeds 1 MW solar & battery backup, and is fully resilient to heat, floods and extreme storms.*

Section 2 – Climate-Related Risks

Climate Risk	Likelihood	Potential Impact on Project
Extreme heat	**High**	Accelerated evaporation losses; tank-integrity stress
Intense rainfall / flooding	**High**	Contamination, overflow, bund failure
Power failure during storms	**Medium**	Fire-suppression & pumping outage
Severe wind / storm events	**Medium**	Roof, pipe-rack & tank-appurtenance damage
Air-pollution / GHG from diesel gensets	**High**	Regulatory non-compliance; public-health risk

Mitigations in design: elevated tank pads, robust drains & bunds, wind-rated roofs, VRU & floating roofs, 1 MW solar-plus-battery for critical loads, smart grid-disconnect SOPs.

Section 3 – Climate-Related Opportunities

Opportunity	Likelihood	Benefits
1 MW rooftop solar-PV + 2 MWh battery	Likely	≥ 40 % auxiliary load on renewables; genset runtime near-zero
Vapour-recovery & floating roofs	Likely	VOC capture, revenue from condensate; NDC compliance
Rain-water capture for fire-fighting	Likely	Potable-water savings, flood buffering
SAF / bio-jet readiness	Likely	Future-proof revenue, supports national clean-fuel targets
Digital EMS & smart meters	Likely	≥ 15 % energy-efficiency gain; granular MRV data

Section 4 – Climate Resilience & Adaptation

- **Flood-resilience:** tank pad +1 m above 100-yr flood; bunds sized @ 110 % tank volume; high-capacity trench drains.
- **Heat-resilience:** reflective tank coatings, temperature-monitoring telematics, shade canopies over sensitive valves.
- **Storm-hardening:** roofs & pipe-racks certified to ≥ 180 km h^{-1} winds; flexible couplings.
- **Water-security:** 500 m^3 rain-water reservoir; low-flow fixtures.
- **Emergency continuity:** 1 MW solar + batteries keep fire pumps & sensors live ≥ 8 h during grid outage.

Section 5 – Stakeholder Engagement

- **Public consultations** with airport authority, aviation operators & host communities on safety and climate risks.
- **Joint climate-safety workshops** with NUPRC/DPR, NCAA & NEMA.
- **Green-skills programme** – 80 staff to be trained on LDAR, solar O&M, SAF handling.

Section 6 – Additional Information

- Exploring **green-bond financing** and flare-offset credits via methane capture.
- Design includes **modular blending skids** to accommodate up to 50 % Sustainable Aviation Fuel (SAF) future mixes.

Section 7 – Integrated NCCP Actions

NCCP Directive (Oil & Gas)	**Embedded Project Action**
Reduce methane & VOC emissions in downstream operations.	Floating roofs; VRU capturing ≥ 95 % vapours
End routine gas flaring by 2030; encourage efficiency & renewables.	Zero flaring; 1 MW solar + EMS reduce grid/GHG
Climate-proof critical fuel-supply infrastructure.	Elevated pads, wind-rated design, flood-proof drainage
Improve emergency response capabilities.	Solar-backed fire pumps; sensor network; extreme-weather SOP

Section 8 – Alignment with National Climate Policy (NCCP) & Nationally Determined Contributions (NDCs) under the Paris Agreement

Adaptation Alignment (NCCP 2021)

NCCP Target (Excerpt)	**Facility Contribution**
Climate-proof fuel & energy-supply infrastructure.	Raised tank-pads, robust bunds, flood drainage.
Improve emergency response systems in critical infrastructure.	Fire-suppression & sensor network on solar-battery backup.
Enhance resilience of transport-energy systems to climate shocks.	Heat-stress certification; wind-rated structures; SOPs for extreme events.

Mitigation Alignment (Nigeria's NDCs)

NDC Goal	Project Contribution
Reduce emissions from energy infrastructure.	VRU + floating roofs; baseline GHG cut ≥ 30 % in 5 yrs.
Promote clean-fuel & energy-transition readiness.	SAF/bio-jet compatibility in all tanks & valves.
Improve energy efficiency in industrial operations.	EMS & smart-metering target ≥ 15 % kWh reduction.

SDG Co-Benefits

SDG	Contribution
SDG 9 – Industry, Innovation & Infrastructure	Modern, climate-compatible fuel logistics
SDG 7 – Affordable & Clean Energy	1 MW onsite solar; SAF readiness
SDG 13 – Climate Action	Integrated mitigation & resilience planning
SDG 3 – Good Health & Well-being	Reduced VOCs & diesel exhaust; higher safety

Monitoring & Verification (MRV)

Climate Indicator	Target
Annual GHG emissions (Scope 1 + 2)	**≥ 30 % reduction vs baseline by Yr 5**
Share of auxiliary energy from renewables	**≥ 40 %**
Climate-related shutdowns / failures	**Zero (≥ 99.9 % uptime)**
SAF / bio-fuel storage retro-fit readiness	**100 % tanks & valves adaptable**
Total fuel losses from evaporation	**≤ 1 %**

Project 5: Inland Dry Port Project

Section 1 – Project Information

No	Item	Description
1	**Project Name**	Inland Dry Port Project
2	**Location**	Inland logistics hub, Oyo State – Erunmu/Ibadan corridor (precise site under review)
3	**Sector / Category**	Transport · Trade Facilitation · Logistics Infrastructure
4	**Estimated Cost**	₦ 43,200,000,000.00 – multimodal terminal, container yard, warehouses, customs zone, ICT hub, rail/road links
5	**Expected Duration**	3 – 5 years to construction & commissioning; 30-year concession
6	**Mapped NCCP Theme**	**Transport & Logistics Infrastructure**
7	**Rationale for Theme Mapping**	NCCP § 4.6 flags freight corridors & inland ports as priority assets for climate-resilient, low-carbon trade.
8	**Purpose Statement**	*Build a climate-resilient inland dry port that decongests seaports, shifts freight to rail, and maintains continuous operations under floods, heatwaves and storms while catalysing green trade growth in the south-west.*

Section 2 – Climate-Related Risks

Climate Risk	Likelihood	Potential Impact
Intense rainfall / flash flooding	**High**	Yard flooding, access disruption, cargo loss
Supply-route washouts / erosion	**High**	Freight delays, export losses
Heatwaves	**Medium**	Equipment overheating, higher cooling demand
Windstorms & lightning	**Medium**	ICT & power-infrastructure damage, outages

In-design mitigations: elevated slabs & drains, flood-reservoirs, heat-reflective roofs, surge protection, redundant power/ICT links, rail contingency routing.

Section 3 – Climate-Related Opportunities

Opportunity	Likelihood	Benefits
Rail-first freight	Likely	≥ 25 % CO_2-cut per t-km, road-congestion relief
500 – 800 kW solar-PV for cranes, lighting & offices	Likely	≥ 35 % site electricity from renewables
Energy-efficient LED & passive-cool warehouses	Likely	20 % energy-savings
Green landscaping / vegetative buffers	Possible	Heat-reduction, storm-water uptake
Digital port-community system	Likely	Cuts truck idling, improves MRV data

Section 4 – Climate Resilience & Adaptation

- **Flood-proof yard** – platforms +0.8 m, 1-in-100-yr drains, emergency storm-water reservoirs.
- **Road/rail resilience** – climate-risk screening of access routes; erosion-control embankments.
- **Heat-stress measures** – high-albedo pavement, ventilated warehouses, shaded truck lanes.
- **Storm hardening** – wind-rated sheds (≥160 km h^{-1}), lightning arrestors, dual redundant ICT fibre.
- **Adaptive monitoring** – IoT rainfall/temperature sensors; annual climate-risk audit.

Section 5 – Stakeholder Engagement

- **Community & trader forums** in Erunmu/Ibadan axis.
- **Workshops** with Nigerian Railway Corporation, NPA, MoT & climate engineers.
- **Green-skills programme** for 200+ local staff on solar O&M and rail logistics safety.

Section 6 – Additional Information

- Green-bond tranche under consideration for solar yard-equipment & drainage works.
- Port design reserves space for **battery-electric shunters** once grid capacity grows.

Section 7 – Integrated NCCP Actions

NCCP Transport Directive	Embedded Project Action
"**Climate-proof national infrastructure systems**"	Elevated platforms, flood-channels, storm-water reservoirs
"Integrate climate risk into trade & transport corridors"	Weather-resilient access roads, hazard-optimised routing
"Promote climate-resilient logistics systems"	Early-warning/dashboards, flexible rerouting SOPs
"Support PPP & low-carbon modal shift"	Rail interface targeting 1 000+ rail trips yr^{-1}

Section 8 – Alignment with National Climate Policy (NCCP) & Nationally Determined Contributions (NDCs) under the Paris Agreement

Adaptation Alignment (NCCP 2021)

NCCP Target (Excerpt)	Dry-Port Contribution
"Climate-proof national infrastructure systems."	Elevated yards, flood-resilient drainage, storm-water reservoirs
"Integrate climate risk into transport corridors."	Climate-screened rail/road access routes & contingency plans
"Promote climate-resilient logistics systems."	Early-warning, operational flexibility, downtime minimisation

Mitigation Alignment (Nigeria's NDCs)

NDC Goal	Project Contribution
"Support low-carbon logistics systems."	Rail shift replaces 1 000+ truck trips yr^{-1}; ≥ 25 % CO_2-cut per container
"Improve energy efficiency in industrial/transport hubs."	LED lighting, passive-cool warehouses, smart meters
"Promote green infrastructure in industrial zones."	500-800 kW solar-PV delivers ≥ 35 % port electricity; vegetative buffers

SDG Co-Benefits

SDG	Contribution
SDG 9 – Industry, Innovation & Infrastructure	High-quality, resilient trade hub
SDG 13 – Climate Action	Cuts logistics GHG & boosts resilience
SDG 12 – Responsible Consumption & Production	Streamlined, circular supply chains
SDG 8 – Decent Work & Economic Growth	Regional job creation; trade-cost reduction

Monitoring & Verification (MRV)

Climate Indicator	Target
% port operations disrupted by climate events	**≤ 5 % per yr**
GHG / container handled vs road-only baseline	**≥ 25 % reduction**
Site electricity from renewables	**≥ 35 % (500–800 kW solar)**
Time to restore road/yard access after flood	**< 8 h**
Rail trips replacing road freight	**≥ 1 000 trips yr^{-1}**

Project 6: Business Complex Redevelopment Project

Section 1 – Project Information

No	Item	Description
1	**Project Name**	Business Complex Redevelopment Project
2	**Location**	Samonda district, Ibadan (Oyo State capital, urban core)
3	**Sector / Category**	Urban Infrastructure, Commerce, MSME Support, Mixed-Use Real-Estate
4	**Estimated Cost**	₦ 10 billion – multi-storey offices, retail, shared services, parking, 1 MW PV, adaptive drainage
5	**Expected Duration**	24 – 36 months (phased fit-out & tenant migration)
6	**Mapped NCCP Theme**	**Human Settlements & Urban Infrastructure · Industry & Commerce · Circular Economy**
7	**Rationale for Theme Mapping**	Project upgrades core commercial infrastructure, drainage, energy and waste systems which explicit priorities in NCCP policy for climate-proofed urban centers.
8	**Purpose Statement**	*Redevelop an ageing business complex into a climate-smart, flood-resilient and energy-efficient hub that safeguards MSME continuity, lowers emissions and improves liveability during climate-stress events.*

Section 2 – Climate-Related Risks

Climate Risk	Likelihood	Potential Impact
Urban flooding	**High**	Basement / shop inundation, electrical damage, lost trading days
Extreme heat	**High**	Higher cooling costs, reduced staff productivity, heat-stress incidents
Power outages during heavy storms	**Medium**	Equipment shutdown, revenue loss for MSMEs
Fire risk (heat + power instability)	**Medium**	Property damage, safety concerns
Soil erosion on periphery slopes	**Possible**	Foundation/landscape degradation

Planned mitigations: elevated slabs, 1-in-100-yr drainage, storm-water capture tanks, cool roofs & green atria, 1 MW solar + battery backup for critical loads, fire-suppression upgrades.

Section 3 – Climate-Related Opportunities

Opportunity	Likelihood	Benefits
1 MW rooftop solar-PV & hybrid inverters	Likely	≥ 40 % site electricity from renewables
High-performance glazing & passive cooling	Likely	≥ 30 % HVAC energy cut
Green roofs, shaded atria & pocket parks	Likely	≥ 4 °C cooler indoor temps without AC
Circular waste & compost hubs	Likely	≥ 50 % landfill diversion; landscaping mulch
Shared green-innovation incubator for MSMEs	Possible	Low-carbon business cluster; new jobs

Section 4 – Climate Resilience & Adaptation

- **Flood resilience** – ground-floor FFL + 0.7 m, flood-gates, storm-water capture tanks sized for 1-in-100-yr event.
- **Heat resilience** – green roofs (2 000 m²), reflective façades, naturally ventilated atria.
- **Energy continuity** – 1 MW solar + 1.5 MWh battery keeps lifts, IT & fire pumps live ≥ 8 h during outages.
- **Water security** – 80 % storm-water reuse for irrigation / flushing; dual-plumbing.
- **Fire-safety upgrades** – heat-resistant cabling, addressable alarms, solar-backed pumps.

Section 5 – Stakeholder Engagement

- **Co-design workshops** with tenant MSMEs and informal-sector vendors on climate-business continuity plans.
- **Public briefings** for neighbouring residents & city planners.
- **Green-skills programme** for facility managers & tenants (solar O&M, waste-sorting, energy dashboards).

Section 6 – Additional Information

- Targeting **LEED-Gold** (or EDGE Advanced) certification.
- Exploring **green-bond** tranche for solar & drainage works.
- 5-year **climate-strategy reviews** aligned with NCCP monitoring guidelines.

Section 7 – Integrated NCCP Actions

NCCP Directive	**Embedded Project Action**
Ensure **urban commercial infrastructure is climate-proofed**.	Raised floors, storm-water capture, reinforced electrical systems
Improve resilience of informal & formal-sector businesses.	Business-continuity protocols, ventilated layout, solar backup
Promote **heat resilience** in commercial zones.	Green roofs, shaded atria, cool roofs
Promote **energy efficiency & renewables** in buildings.	High-performance glazing, LED/HVAC retrofits, 1 MW solar
Advance circular-economy solutions.	Waste-segregation bays, composting gardens

Section 8 – Alignment with National Climate Policy (NCCP) & Nationally Determined Contributions (NDCs) under the Paris Agreement

Adaptation Alignment (NCCP 2021)

NCCP Target (Excerpt)	Complex Contribution
Climate-proof urban commercial infrastructure	Elevated slabs, storm-water tanks, flood-barriers
Improve business resilience to climate shocks	Solar-battery backup, continuity SOPs, ventilated design
Promote heat-resilient commercial zones	2 000 m² green roofs, shaded atria, cool façades

Mitigation Alignment (Nigeria's NDCs)

NDC Goal	Complex Contribution
Promote **energy efficiency** in commercial buildings	Passive cooling, high-efficiency HVAC, smart meters (≥ 30 % kWh cut)
Expand **renewable energy** in built environment	1 MW rooftop PV + solar signage → ≥ 40 % site load
Encourage **low-carbon MSME clusters**	Shared services lower per-tenant emissions; green incubator

SDG Co-Benefits

SDG	Contribution
SDG 8 – Decent Work & Growth	Safeguards MSME jobs; adds green-tech roles
SDG 11 – Sustainable Cities	Upgrades legacy commercial core with climate-smart design
SDG 13 – Climate Action	Integrated mitigation & resilience
SDG 9 – Industry & Innovation	Demonstrates green-building & circular-economy model

Monitoring & Verification (MRV)

Climate Indicator	**Target**
Indoor temperature differential vs ambient during heatwave	**≥ 4 °C cooler without mechanical AC**
Share of energy demand met by renewables	**≥ 40 %**
Storm-water reused / safely discharged	**≥ 80 %**
Operational downtime due to extreme weather	**< 1 day yr^{-1}**
GHG emissions m^2 vs pre-redevelopment baseline	**≥ 30 % reduction**

Project 8: Upgrade & Construction of Radiotherapy Treatment Center, Adeoyo State Hospital

Section 1 – Project Information

No	Item	Description
1	**Project Name**	Upgrade & Construction of Radiotherapy Treatment Center
2	**Location**	Adeoyo State Hospital, Ibadan, Oyo State
3	**Sector / Category**	Health Infrastructure · Energy Security · Emergency Response
4	**Estimated Cost**	*Under final review* – detailed bill of quantities will be issued with the EPC tender.
5	**Expected Duration**	≈ 24 – 30 months (civil works, bunker shielding, equipment installation & commissioning)
6	**Mapped NCCP Theme**	Health, Human Settlements, Disaster-Risk Management · Energy
7	**Rationale for Theme Mapping**	Hospitals are priority "life-saving infrastructure" in NCCP § 5.4; uninterrupted oncology services require flood-safe design and renewable-backed power.
8	**Purpose Statement**	*Expand oncology capacity with a modern, climate-resilient radiotherapy centre that guarantees ≥ 99 % treatment uptime, halves diesel dependence through solar-battery backup, and protects vulnerable cancer patients during extreme-weather events.*

Section 2 – Climate-Related Risks

Climate Risk	Likelihood	Potential Impact
Power outages from storms / flooding	High	Interrupted therapy sessions; patient safety risk
Extreme heat & humidity	High	Equipment malfunction; dose inaccuracy; staff/patient discomfort
Access-road or entrance flooding	Medium	Delayed patient arrival; supply-chain disruption
Water stress / drought	Medium	Sterilization & hygiene challenges

Planned mitigations: 750 kWp solar + 1 MWh battery; raised equipment floors; passive shading & high-COP HVAC; 200 m³ rain/grey-water system; dedicated flood-free access lane.

Section 3 – Climate-Related Opportunities

Opportunity	Likelihood	Benefits
Solar-plus-battery backup	High	≥ 50 % facility load on renewables; diesel cut
High-efficiency HVAC & LED	High	≥ 35 % cooling-energy reduction
Water-recycling network	Medium	≥ 50 % potable-water savings
Green roofs & reflective façades	Medium	Cooler indoor temps; extended roof life
GHG inventory & reporting	High	Supports national health-sector MRV database

Section 4 – Climate Resilience & Adaptation

- **Flood safety** – treatment vaults on plinth + 1 m, perimeter drains & sump-pumps with UPS.
- **Heat resilience** – cool roofs, brise-soleil, demand-controlled ventilation.
- **Energy security** – 750 kWp PV, 1 MWh Li-ion storage; diesel only tertiary.
- **Water security** – dual-plumbing, rain-/grey-water reuse for flushing & landscaping.
- **Emergency continuity** – climate-event SOPs, staff drills, equipment surge-protection.

Section 5 – Stakeholder Engagement

- **Co-design sessions** with oncologists, nurses, patients & community reps.
- **Quarterly resilience briefings** with Oyo State Ministry of Health & NEMA.
- **Training programme** for hospital engineers on solar-battery O&M and flood-response protocols.

Section 6 – Additional Information

- Centre can serve as **cooling/refuge space** during regional heatwaves.
- Targeting **LEED-Healthcare Gold** to unlock concessional climate finance.

Section 7 – Integrated NCCP Actions

NCCP Directive	Embedded Project Action
Climate-proof health infrastructure & supply chains	Flood-raised bunkers, waterproof vaults, dedicated dry-access lane
Strengthen health-sector resilience to climate shocks	≥ 99 % uptime via solar-battery; emergency continuity plan
Promote health equity under climate stress	Priority service for low-income patients; subsidised transport during floods
Reduce diesel reliance in public facilities	750 kWp PV + 1 MWh battery displace generators
Improve energy efficiency in hospitals	LED lighting, VSD chillers, insulated façades

Section 8 – Alignment with National Climate Policy (NCCP) & Nationally Determined Contributions (NDCs) under the Paris Agreement

Adaptation Alignment (NCCP 2021)

NCCP Target (Excerpt)	Centre Contribution
Climate-proof health infrastructure & medical supply chains	Elevated floors; flood-walls; resilient access routes
Strengthen health-sector resilience to climate shocks	Solar-battery backup; critical-service SOPs; redundant HVAC
Promote preparedness & equity in health services	Focus on uninterrupted cancer care for vulnerable groups

Mitigation Alignment (Nigeria's NDCs)

NDC Goal	Centre Contribution
Reduce public-sector diesel dependence	Solar-plus-battery meets ≥ 50 % load; gensets only tertiary
Improve energy efficiency in hospitals	Variable-speed HVAC, LED, insulation → ≥ 35 % cooling-energy cut
Track GHG emissions in health facilities	Implements real-time GHG inventory & reporting dashboard

SDG Co-Benefits

SDG	Contribution
SDG 3 – Good Health & Well-being	Reliable radiotherapy boosts survival & care quality
SDG 7 – Affordable & Clean Energy	Clean solar power replaces diesel
SDG 13 – Climate Action	Combines mitigation & adaptation in health sector
SDG 10 – Reduced Inequality	Improves access for underserved patients

Monitoring & Verification (MRV)

Climate Indicator	**Target**
Radiotherapy system uptime during adverse weather	**≥ 99 %**
Share of facility energy from solar / hybrid	**≥ 50 %**
Cooling-related energy-use reduction vs baseline	**≥ 35 %**
Patient treatments maintained during climate disruptions	**≥ 95 % retention**
GHG emissions avoided (diesel displacement)	**≥ 20 t CO_2e yr^{-1}**