

**Africa Center of Excellence for
Development Impact (ACE Impact)**

**SUSTAINABLE POWER AND ENERGY
DEVELOPMENT (ACE-SPED)**

Implementation Plan

2019 – 2023

Draft July 4, 2019

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List of abbreviations and acronyms

ACE-SPED	Africa Center of Excellence for Sustainable Power and Energy Development
APC	Academic Program Co-ordinator
ARC	Applied Research Co-ordinator
ASCON	Administrative Staff Collage of Nigeria
BPs	Bank procedures
CBT	Computer-based testing
CHP	Combined Heat and Power (Plant)
CL	Centre Leader
DAAD	German Academic Co-operation Agency
DCL	Deputy Centre Leader
DLI	Disbursement-Linked Indicators
DLR	Disbursement Linked Results
EEDC	Enugu Electricity Distribution Company
EIA	Environmental Impact Assessment
ESMF	Environmental and Social Management Framework
ESSO	Environment and social Safeguards Officer
ICAN	Institute of Chartered Accountants of Nigeria
ICT	Information and Communications Technology
IIA	Institute of Industrial administration
ILO	Industrial Liaison Officer
MIS	Management Information System
NAPTIN	National Power Training Institute of Nigeria
NCEMD	National Center for Equipment Maintenance and Development
NCERD	National Centre for Energy Research and Development
NIM	Certification with Nigeria Institute of Management
NPE	National Policy on the Environment
OPs	Operational Policies
PAD	Project Appraisal Document
PDO	Project Development Objective
Post-UME	Post University Matriculation Examination
PRODA	Project Development Institute (Enugu)
SEDI	Scientific Equipment Development Institute
TOR	Terms of Reference
TRECCA-Africa	Training for Resources Efficiency and Climate Change Adaptation in Africa
UNN	University of Nigeria, Nsukka
UNTH	University of Nigeria Teaching Hospital
WAPP	West Africa Power Pool

1. NARRATIVE SUMMARY (max 2 pages)

The Africa Center of Excellence for Sustainable Power and Energy Development (ACE-SPED) is based in the faculty of Engineering in the main campus of the University of Nigeria Nsukka. The Centre, which was conceptualized to proffer sustainable solutions to some development challenges peculiar to the Sub-Saharan Africa region draws her staff from the University of Nigeria and operates on the basis of already established managerial and fiduciary practices in the University. These developmental challenges faced by the vast majority of countries in the region include lack of access to reliable electric power supply, poor diffusion of renewable and alternative energy technologies, as well as shortage of high level skilled manpower to deploy and manage the power supply system. Ironically, solar, biomass, wind and other renewable energy resources abound throughout the region.

The fundamental aims of ACE-SPED are, therefore to carry out impactful educational, research, development and training activities in five major thematic research areas, namely (i) Electric power systems development; (ii) Renewable energy, waste-to-energy and energy conservation; (iii) Energy resources assessment and forecasting;(iv) Sustainable energy materials and (v) Energy Policy, Regulation and Management. Using a student-centred, interactive and engaging educational curriculum cum robust Research & Development themes with strong practice orientation, ACE-SPED plans to equip its Master's and PhD degree graduates to deliver great impact on sustainable power and energy development in the Sub-Saharan Africa region in the medium to long terms. As a matter of focus, the Centre aims to train skilled manpower to boost electricity generation, distribution and handling in the region to support national grids as well as the West Africa Power Pool (WAPP). The centre will also train manpower in the areas of renewable energy for electricity generation from solar and biomass via practical workshops. Starting from the first year, the centre will mount short courses for personnel of management cadre in energy and power sector who *ab initio* are unskilled and uninformed on matters concerning energy and power management. Energy management and policy courses would be mounted on short term basis with a view to training participants to adequately manage the sector under prescribed policies.

The educational and research programmes are structured in such a manner that would produce well trained and focused young professionals equipped with the right skills that would enable engagement on diverse power and energy projects to address the afore-mentioned

challenges. The Centre will interface with her sectoral (industrial and research) partners through periodic skills development and capacity building programs, which are well embedded in the academic and research work plan of the Centre. Regular visits by international partners will form a valuable platform for transfer of best practices.

ACE-SPED will continue to sustain its programmes well after the funding period through a well-articulated sustainability plan. The plan will hinge on support from the university and industrial/sectoral partners on the one hand, and on a well-articulated internal revenue generating mechanism through short/refresher courses, consultancy and spin-off ventures in partnership with private/public sector stake-holders. For realization of the objectives of the ACE, the operations will be subjected to international best practices in monitoring and evaluation, at every stage of the programme. Through the Master's and PhD programmes of the Centre, in addition to the training workshops and short courses to be mounted from time to time, it is intended that a critical mass of experts will be produced, who will assist individuals, communities and businesses in remote areas not covered by the national grid to install and maintain renewable energy systems with high level of expertise required within the first four years of the project.

Starting with small scale systems in the first year, the Centre will progress to deliver functional photovoltaic plants, biomass-to-electricity systems (biogas plant, gasifier, or CHP) in the range of 5kW - 1000 kW, for mini-grid/smart grid system, by the middle of the fourth year. At the end of the third year, the Centre should have developed at the very least, market-ready Pure Sine wave inverters and charge controllers, and porcelain/glass type insulators for the Sub-regional market.

Based on feedback from evaluators at different stages of the proposal development, ACE-SPED team resolved to deliberately pursue a well articulated sustainability plan that is hinged on the production of market-ready prototype tamper-proof smart meter, electrical insulators, solar crop drying systems, egg incubators, biogas digesters etc, which are expected to provide income beyond the funding period.

2. OVERVIEW OF PLANNED OUTPUTS, REVENUE GENERATION, ACTIVITIES AND COST FOR FIRST YEAR

The planned activities for the first year of the Africa Center of Excellence for Sustainable Power & Energy Development (ACE-SPED) University of Nigeria are those necessary to establish a strong foundation that will deliver World Class Educational programmes envisaged to close the skill gap in the Power and Energy industries within the West African sub-region. The ACE-SPED will focus on training, research and industrial outreach in form of short courses for revenue generation to address the risk of skilled professionals within the region. Post graduate training in existing academic Departments have inherent limitations and hence do not meet the expectations of the demand for skilled manpower in the power sector for accelerated regional development. The training components in the five thematic areas of the center are aimed to produce knowledgeable operators who will be involved in the strategic goal of regional energy integration and efforts for self-sufficiency in electricity supply in the West African Sub-region. Over the lifetime of the project, graduates from the center equipped with the right skills will take the lead to ensure increase access to stable, reliable and affordable electricity within the region. The teaching and research activities of the center will be interdisciplinary and student-centred with strong practice orientation.

In order to realize the anticipated outputs, strong partnership with industry and relevant academic entities and the launch of the program in the first year are imperative. The expected outputs (in no particular order) of the key activities of the first year needed to jump-start the program are: production of implementation document; workshop on World Bank procurement process; operationalization of ACE-SPED website; launching of center and signing of MoUs with partners; procurement of project vehicles; renovation and equipping of international scholars' hostels, classrooms and seminar rooms; skills gap analysis in the power and energy sector; development and production of MEng/MSc, PhD programs and students' handbook; senate approval of ACE-SPED postgraduate program; advertisement of students' enrollment; regular meetings of ACE-SPED team; planning, EPA, documentation & advertisement for ACE-SPED service core building; training of faculty & technical staff on use of state-of-the-art teaching aids; training workshops.

Over the lifetime of the World Bank ACE impact center, funds generating activities will be vigorously pursued to ensure sustainability after the expiration of the funding tenure. Such fund generating activities include writing proposals to funders of research councils for research grants, tuition fees, charges for use of specialized laboratory equipment, mounting of short courses, and others. It is expected that the center will generate at least US\$1, 250,000 externally from these activities. These internally generated funds and grants will make possible the continuing functioning of the center after the cessation of the World Bank grant. The ACE-SPED also has a good number of PhDs (twelve Professors, ten Senior Lecturers and 2 Lecturers I) from across the departments capable of continuing its programs without compromising quality and effectiveness of individual staff.

The detailed overview of the activities of the center that need to be accomplished over the project lifetime are shown in the table below.

Table 1: Work Plan for Entire Project Period

World Bank Africa Centre of Excellence for Sustainable Power & Energy Development (ACE-SPED) University of Nigeria, Nsukka								2019 - 2023												
								Timeline												
Component 1: Strengthening Capacity to provide relevant and quality services for Sustainable Power & Energy Development																				
Activity No	Activities	Objectives	Justification	Output	Estimated Budget (\$)			Responsible officer	J	F	M	A	M	J	J	A	S	O	N	D
					ACE	Partners	Total													
1. Yr 1	Development of Implementation work plan	To produce a focused overall work plan to assist in accountability & smooth operations of project	The work plan forms a focal point to assist in accountability and smooth operations of the program	A detailed and focused work plan developed and produced	20,000	5,000	25,000	CL												
2. Yr.2	Pre-bid Conference	To sensitize the potential bidders on WB procurement procedures & guidelines	This is necessary to ensure transparency, proper understanding and smooth operations of the WB procurement process	Enhanced competitiveness of the bidding process achieved	8,000	2,000	10,000	CL/PM O/PO												
3 Yr. 2	Securing University Senate recognition of ACE-SPED as a statutory University unit	For recognition of ACE-SPED as a statutory unit for budgetary purposes	This is to ensure sustainability, visibility and ownership of ACE-SPED by the University	Recognition, visibility, ownership and sustainability achieved	1,000	0.00	1,000	CL												
4. Yr.1	Development of ACE-SPED website	To develop a customized website for easy access and dissemination of Centre activities	This to provide easy tracking of the programs of the Centre and feedback from stakeholders	ACE-SPED website operationalized	10,000		10,000	Information Officer												
5	Production and signing of	To establish strong partnership with	This will ensure robust and well	A robust and benefit-oriented	50,000		50,000	Centre Leader												

Yr. 2	MoUs/Launch of Center	Institutions and smooth take off of the center.	defined benefit-oriented partnerships that will deliver anticipated outcomes/publicity of center take off.	MoUs with partners signed and center launched.																
6 Yr. 2, 3,4,5	Publication of ACE-SPED Journal, Bulletin and Newsletter.	Formation of the editorial board, production studio, material acquisition, production of the journal, bulletin, newsletter and promotion of the publication, feedback	The production of ACE-SPED journal, bulletin and Newsletter will create a wider reach of the activities, enhance visibility and engender anticipated societal impact.	ACE-SPED journal, Bulletin and Newsletter	20,000		20,000	ARC												
7 Yr. 2	Preparation of Building Plan, award of contract and construction of ACE-SPED Service Core building complex	To plan, construct and equip an identity rallying point for seminars, workshops, board room, ICT backbone and offices befitting a World Bank Assisted Centre of Excellence	Contract for building of ACE-SPED service core building complex will create visibility, a sense of worth and enhanced productivity as Africa Centre of Excellence.	Land mark ACE-SPED service core building complex constructed and operationalized.	1,420,000		1,420,000	CL												
8 Yr 2.	Procurement of Project Vehicles	To acquire vehicles that would enhance mobility in the Centre	To enhance research, development and learning activities in ACESPED.	2 No project vehicles procured	160,000		160,000	CL												
9 Yr. 1, 2,3,4,5	Scheduled ACE meetings (Int'l Advisory Board, Industrial/Sectoral Advisory Board,	Holding of regular meetings with stakeholders to review, update and advise management	Meetings necessary to maintain proper trajectory in the execution of the programs of the Centre.	Meetings held with documentary of proceedings.	80,000	20,000	100,000	CL												

	Management Committee Research and Academic Co-ordination)	Committee on issues of relevance to actualize goals of the Centre.																		
10 Yr.2.	Renovation of international scholars' hostels with appropriate furnishings, fittings and back-up power	To provide a conducive living environment for international students	A conducive living environment will reduce stress, promote quality health and enhance academic performance	International scholars' hostels renovated and furnished with back-up power supply.	70,000	35,000	75,000	CL												

World Bank Africa Centre of Excellence for Sustainable Power & Energy Development (ACE-SPED) University of Nigeria, Nsukka								2019 - 2023													
								Timeline													
Component 2: Strengthening Capacity to provide Student-centered, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development																					
Activity No	Activities	Objectives	Justification	Output	Estimated Budget (\$)			Responsible Officer	J	F	M	A	M	J	J	A	S	O	N	D	
					ACE	Partners	Total														
1. Yr. 1	Development and production of M.Eng/Msc and PhD curricula and students' handbook	To develop Curricula for the M.EngMsc and PhD programs of the ACE-SPED	The academic curricula are to be developed to enable enrollment of students into the M.Eng/Msc and PhD programs	M.Eng/MSc, PhD curricula and students' handbook developed and produced.	10,000		10,000	CL/APC													
2. Yr. 2	Workshop with ACE-SPED partners on curricula	To review the developed curricula and receive inputs from stakeholders	This will ensure that training offered by the ACE-SPED is relevant to the stakeholders and addresses identified regional developmental challenges in the sector.	Reviewed and acceptable curricula	20,000	20,000	40,000	CL													
3. Yr. 2	Securing approval of the M.Eng/MSc and Ph.D programs at the Postgraduate School and the University Senate.	To pursue the approval of the developed curricula for M.Eng/Msc and Ph.D at the Postgraduate school and the University Senate.	This will enable smooth take off of the programs with due approval.	Approved programs	2,000		2,000	CL													
4. Yr. 1, 2,3,4,5	Advertisement, recruitment drive for intake of students	Adverts are made for the intake of students for the M.Eng and Ph.D programs.	The essence of the adverts is to ensure wide publicity of the programs both regionally and	Adverts for intake of students are made.	10,000		10,000	CL/APC													

			beyond.																
5. Yr. 1,2,3,4,5	Selection and admission of M.Eng/MSc and PhD candidates.	Candidates who applied to the various programs of the ACE-SPED are screened for admission.	Thorough screening and eventual merit-based admission of candidates are necessary to ensure that the very best candidates are admitted to the ACE-SPED.	Qualified students are admitted based on merit.	10,000		10,000	CL/APC											
6. Yr. 2	Upgrading of UNN internet network (Lionet) for ACE-SPED facilities	To provide unrestricted internet access for ACE-SPED facilities	Unhindered access to the internet is indispensable for effective teaching and research.	LIONET Internet network is upgraded.	150,000		150,000	CL											
7. Yr. 2	Upgrading of facilities in the Seminar Room for visual learning, incl. video conferencing and webinars.	To provide visual learning facilities in the Seminar Room.	This will make feasible real time virtual learning through such avenues as web conferencing and webinars for remote learning.	Facilities for virtual learning provided.	100,000		100,000	CL											
8 Yr. 2	Renovation and upgrading of 5 no. classrooms, including the provision of teaching aids and back-up power solutions.	To renovate and upgrade 5 no classrooms with modern teaching aids (multimedia facilities, white boards, overhead projectors) and back-up power solutions.	This will ensure conducive environment for effective teaching and learning	Five (5) classrooms upgraded and renovated	120,000		120,000	CL											

9. Yr. 2	Training of Faculty on the use of multimedia teaching aids	To train faculty on use of multimedia teaching aids	Faculty are trained on the use of the procured multimedia teaching aids to ensure optimal uses.	Faculty are trained to use multimedia teaching aids	12,000	5,000	17,000	CL/APC											
10. Yr. 2,3,4,5	Faculty and students' support	To support faculty and students through conference/workshop/seminar attendance, research publications, scholarly visits and development of lecture materials, patents, etc.	This will help improve and sustain staff and students' competences towards excellence in education and research.	Support provided to staff and students.	350,000	100,000	450,000	CL											
11. Yr. 2,3,4,5	Provision of Scholarships for MEng/MSc and PhD students including research costs to regional students.	To provide fellowship, on competitive basis, to regional students to cover cost of studies and research	This is a source of encouragement to regional students to encourage the enrollment of highly qualified and motivated students.	Regional students enrolled in the ACE are supported.	280,000		280,000	CL/APC											
12. Yr. 2,3,4,5	Organization of short courses and workshops to address specific skill needs for industry	To organize periodic short courses to address skill gaps in industry	The short courses will address skill gaps industry to enhance productivity	Short courses conducted and qualified experts produced	250,000	50,000	300,000	CL/APC											

13. Yr. 2,3,4,5	Language course for non-English speaking students	To provide English language training for non-English speaking students	This is to ensure that Non-English speaking students are taught English.	Non-English speaking student are taught English.	10,000		10,000	DCL/APC											
14. Yr. 2,3,4,5	Development of educational materials for outreach programs.	To develop and produce educational materials for outreach programs.	The instructional materials to be developed shall serve as easy guide for instructors during the outreach programs.	Educational materials for the vocational outreach program developed	17,800	1,200	19,000	CL/APC											
15. Yr. 2,3,4,5	Vocational outreach educational programs for secondary school students	To undertake vocational outreach educational program to select secondary and primaries schools	The essence of the program is to stimulate the desire for STEM in the young stars	Vocational outreach educational program conducted.	5,000	1,000	6,000	APC											
16. Yr. 2,3,4,5	Subscription to relevant international journals and databases. (Research4Life)	To subscribe to relevant international journals and academic databases	To ensure unrestricted access to top international journals and academic databases for faculty and students of the ACE-SPED	Subscriptions are made to relevant international journals and academic databases	15,000	5,000	20,000	ARC/APC											
17. Yr. 2,3,4,5	Outreach educational program for females and	To conduct outreach educational programs for females and	This serves to ensure the inclusion of females and members of underserved	Outreach programs are conducted	7,000	3,000	10,000	APC											

	underserved communities	underserved communities	communities in STEM with special emphasis on Energy and Power																
18. Yr. 2,3,4,5	On-site workshops and short trainings at ACE-SPED partner sites	To conduct on-site workshops and trainings at partner sites.	The on-site workshops and trainings shall provide avenue for exposure of participants to new challenges and breakthroughs in industry	Workshops and short training conduct at partner sites	2,000	50,000	52,000	APC/ILO											
19. Yr.2,3,4,5	Staff exchange for sabbatical and visiting lectureship	To draw highly qualified manpower to teach and supervise students at the ACE-SPED	Staff exchange, Sabbatical and visiting opportunities will afford the ACE-SPED access to highly skilled pool of manpower to provide training for the benefit of all stakeholders.	Highly skilled and competent manpower attracted to the ACE-SPED	50,000	50,000	100,000	CL/ILO											
20. Yr. 2,3	Pursuit of International accreditation of M.Eng and Ph.D programs through HCRES	To pursue International accreditation of M.Eng and Ph.D programs of the ACE-SPED	This will ensure standardization and international recognition of the programs.	Internationally accredited Programs by HCRES.	450,000		450,000	CL											

World Bank Africa Centre of Excellence for Sustainable Power & Energy Development (ACE-SPED) University of Nigeria, Nsukka								2019 - 2023												
								Timeline												
Component 3: Strengthening Capacity to provide robust needs-driven research with strong practice orientation for Sustainable Power & Energy Development																				
Activity No	Activities	Objectives	Justification	Output	Estimated Budget (\$)			Responsible Unit	J	F	M	A	M	J	J	A	S	O	N	D
					ACE	Partners	Total													
1. Yr. 1	Gap analysis survey to ascertain the research needs of the sector	To undertake gap analysis survey with a view to ascertaining the research needs of the sector	This is necessary in order to become acquainted with the research needs of the sector	Existing gap in the sector is documented	10,000	10,000	20,000	CL/ILO												
2. Yr 2,3,4,5	Fabrication of relevant R & D equipment	To fabricate relevant R & D equipment	Fabrication of relevant research equipment is imperative to realize desired output	Relevant Research fabricated and operationalized	25,000	50,000	75,000	CL												
3. Yr. 2	Capacity building of core team of Research Leads to head the thematic areas	To strengthen the research capabilities of core Research Leads in the area of modern approaches to research to enhance productivity	This will ensure maximum contribution of ACESPED as a regional core of excellence in sustainable power and energy development.	Core team research leads developed for improved research delivery	60,000	10,000	70,000	CL/AR C												
4 Yr. 2,3	Training of faculty and technical staff on use of state-of-the-art equipment	To improve the staff proficiency in the use of state-of-the-art equipment	This will facilitate efficient deployment of research equipment	Training of faculty & technical staff for optimal utilization of state-of-the-art equipment completed	15,000	5,000	20,000	DCL												
5	Training of safety and security	To train safety and security	This will promote security of life	Safety and security are	10,000	5,000	15,000	ESSO												

Yr. 2,3,4,5	security personnel	personnel on the latest measures and counter treats strategies to life and property	and property and conducive work environment	assured															
6 Yr. 2,3	Upgrading of Laboratory of Industrial Electronics, Power Devices and New Energy Systems	To furnish and equip the Industrial Electronics/New Energy Laboratory for practice orientation in energy and power research	This is necessary to carry out research studies on Industrial Electronics/New Energy	Well-equipped and functional Industrial Electronics/New Energy Laboratory	200,000	50,000	250,000	CL											
7 Yr. 2, 3	Provision of Equipment for ACESPED Fabrication Workshop	To furnish and equip the Fabrication Workshop	This is necessary to carry out fabrication for research studies on Power and Energy	Well-equipped Fabrication Workshop	250,000	20,000	270,000	CL											
8 Yr. 1,2,3,4,5	Development and review of research proposals in the thematic areas	To develop and review research proposals in the thematic areas in collaboration with the sector partners	This will enhance synergy between academia and industrial sectors	Research proposals reviewed and gaps addressed	2,000	1,000	3,000	ARC											
9 Yr. 2, 3	Provision of Equipment for Renewable Energy Laboratory	To furnish and equip the Renewable Energy Laboratory	This is necessary to carry out research studies on Renewable Energy	Well-equipped Renewable Energy Lab.	190,000	20,000	210,000	CL											
10 Yr. 3, 4	Provision of Equipment for the High Voltage	To furnish and equip the High Voltage	This is necessary to carry out High Voltage research	Well-equipped High Voltage Laboratory	150,000	20,000	170,000	CL											

	Voltage Laboratory	Laboratory	studies																
11 Yr. 2, 3	Provision of Equipment for Advanced Materials Characterization Laboratory	To furnish and equip the Advanced Materials Lab	This is necessary to carry out research studies on Materials Characterization	Well-equipped Energy Materials Laboratory	340,000	20,000	360,000	CL											
12 Yr. 2, 3	Provision of Equipment for Electric Power Systems Laboratory	To furnish and equip Electric Power Systems Lab	This is necessary to carry out research studies on Electric Power Systems	Well-equipped Electric Power Systems Laboratory	650,000	12,000	662,000	CL											
13 Yr. 1, 2,3,4,5	Organisation of seminars/workshops and publication in journals	To document, disseminate, prototype and in extension patent research results	This will create awareness, enhance visibility and promote societal impact	Research results are documented	10,000	3000	13,000	DCL											
14 Yr.2,3,4,5	Field trips	To expose students and staff to industry sector activities, on-site and data collection	This will enhance understanding of industrial processes and furnish with relevant data teaching and research	Field trip executed	15,000	5,000	20,000	ILO/ARC											
15 Yr.2,3,4,5	Field trials	To ascertain the workability and performance of developed prototypes	This will help in product commercialization	Field trial executed	10,000	20,000	30,000	ARC/ILO											
16 Yr. 2,3,4,5	Software purchase and development	To purchase and develop relevant software required for	This will facilitate research and development in energy and power	Software is developed or procured	35,000	10,000	45,000	ARC/APC											

		energy and power research																																												
17	Yr. 2,3,4	Regional workshops	To organize periodic regional workshops to promote inclusiveness in ACE-SPED academic and research programmes	This will enhance impact, relevance and regional inclusiveness in ACE-SPED academic and research programmes	Regional workshops organised	25,000	5,000	30,000	CL																																					
18	Yr. 1,2,3,4,5	Facilitate exchange and sharing of information and library resources between ACE-SPED and partners	To facilitate exchange of information and resources between ACE-SPED staff and partners	Exchange of information and library resources will enhance effective collaboration between ACE-SPED staff and partners	Information and library resources shared	1,000	3,500	4,500	ILO																																					
19	Yr. 1,2,3,4,5	Attendance to ACE-related meetings and events outside the University.	To attend ACE related meetings outside the University.	This will promote synergy between ACE-SPED and stakeholders as well as ensure smooth running of the center	Information exchange and reports on project development objectives accomplished.	310,000	50,000	360,000	CL																																					
20	Yr. 1, 2,3,4,5	Annual procurement, financial and external audit reports	To prepare annual procurement, financial and external audit reports	This will promote accountability and transparency	Annual procurement, financial & audit reports produced	30,000		30,000	CL																																					
21	Yr.	Organize regular planning meetings with ACE-	To organize consultative forums involving all major stakeholders in	Need to prepare the project document, detailing all project activities,	Meeting held and detailed project documents produced	20,000	1,000	21,000	DCL/LO																																					

1,2,3,4,5	SPED partners and major stakeholders	preparation for project take-off.	involvements, detailed allocation of duties, collaborative work schedules, detailed log framework and results framework for M&E.																	
22 Yr.1,2,3,4,5	Undertake industrial liaison visits	To promote effective engagement between ACESPED and partners	This will enhance links between ACE-SPED and industry partners	Industrial Liaison visits undertaken	10,000	20,000	30,000	ARC/LO												

Table 2. Overview of expected outputs and related income within the first project year

- This is a performance-based project, which means that the most important part of planning is to secure the flow of funds. This is done by ensuring that the planned activities deliver results towards the agreed DLR's thereby ensuring planned targets for each individual DLI is reached.
- Please be mindful that the turnover time from achievement of DLI results, through verification to actual fund release to the ACE is about 6 months. That means that funds triggered through DLI's achievements in second half of the year will only be available the next year. DLI 1 Effectiveness is designed to give each ACE sufficient capital to have funds available until own first installment based on DLI's.
- In consecutive annual workplans it is required that each individual ACE follow its progress in meeting the different DLR's. This is to ensure that the ACE has a balanced approach and is not lagging in any of the result areas. The DLI's are designed to be interlinked and to reinforce each other, so lagging in one might impede expected effect of others.

Outputs and funds generation year 1 (US\$)				
	Expected outputs in numbers	Percentages of the DLI	Unit price	Expected revenue (USD)
ACE results				
DLI 1 Readiness				
<i>DLI 1.1 Basic Readiness</i>	100	100	300,000	300,000
<i>DLI 1.2 Full Readiness</i>	100	100	300,000	300,000
DLI 2 Development Impact				
<i>DLI 2.1 Independent external evaluation of development impact</i>	-	-		0.00
DLI 3 Quantity of students				
<i>DLI 3.1a New eligible PhD student's male</i>	-		10,000	
<i>DLI 3.1b New eligible PhD student's female</i>	-		12,500	
<i>DLI 3.1c New eligible PhD student's regional male</i>	-		12,500	
<i>DLI 3.1d New eligible PhD student's regional female</i>	-		15,600	
<i>DLI 3.2a New eligible Master student's male</i>	-		2,000	
<i>DLI 3.2b New eligible Master student's female</i>	-		2,500	
<i>DLI 3.2c New eligible Master student's regional male</i>	-		4,000	
<i>DLI 3.2d New eligible Master student's regional female</i>	-		5,000	
<i>DLI 3.3a New eligible short course student's male</i>	-		400	
<i>DLI 3.3b New eligible short course student's female</i>	-		500	
<i>DLI 3.3c New eligible short course student's regional male</i>	-		800	
<i>DLI 3.3d New eligible short course student's regional female</i>	-		1,000	
<i>DLI 3.4 First degree students (only applicable for emerging centers and ACE's with undergraduate programs)</i>			1,000 M 1,150 F 2,000 RM 2,500 RF	
DLI 4 Quality of Education				
<i>DLI 4.1a National accreditation</i>	Yes		100,000	100,000
<i>DLI 4.1b GAP assessment following International standards</i>	No	(0 or 100)	100,000	0.00

<i>DLI 4.1c Self-assessment following International standards</i>	No	(0 or 100)	100,000	0.00
<i>DLI 4.1d International accreditation</i>	No	(0 or 100)	500,000	0.00
<i>DLI 4.1e New courses meeting international standards</i>	-	(0 or 100)	50,000	0.00
<i>DLI 4.2 ACE International research publications with national partners (not for emerging centers)</i>	5		10,000	50,000
<i>DLI 4.2 ACE International research publications with regional partners (not for emerging centers)</i>	2		15,000	30,000
<i>DLI 4.3a Infrastructure improvement for research and learning (procurement and civil works) Step 1: Approved plan</i>	No	(0 or 100)	300,000	0.00
<i>DLI 4.3b Infrastructure improvement for research and learning (procurement and civil works) Step 2: Procured or Foundation Constructed</i>	0	(0 or 100)	300,000	0.00
<i>DLI 4.3c Infrastructure improvement for research and learning (procurement and civil works) Step 3: Operational or Construction Completed</i>	0	(0 or 100)	300,000	0.00
<i>DLI 4.3d Infrastructure improvement for research and learning (procurement and civil works) Step 2: NA or Building Operational</i>	0	(0 or 100)	300,000	0.00
DLI 5 Relevance of Education & Research				
<i>DLI 5.1a External generated revenue from private sector</i>	0		X 2	0.00
<i>DLI 5.1b External generated revenue from other sectors</i>	0		X 1	0.00
<i>DLI 5.2a Number of students with at least 1-month internship or staff with placement nationally</i>	0		1,000	0.00
<i>DLI 5.2b Number of students with at least 1-month internship or staff with placement regionally</i>	0		1,500	0.00
<i>DLI 5.3 Number on new entrepreneurship, innovation, start-up companies, and commercialization support programs</i>	0		100,000	0.00
DLI 6 Fiduciary Enhancement				
<i>DLI 6.1 Timely fiduciary reporting</i>	0	(0 or 100)	15,000/year	0.00
<i>DLI 6.2 Functioning internal audit unit</i>	100	(0 or 100)	15,000/year	15,000
<i>DLI 6.3 Web Transparency on Fiduciary reports</i>	100	(0 or 100)	15,000/year	15,000
<i>DLI 6.4 Quality of Procurement planning</i>	0	(0 or 100)	15,000/year	0.00
DLI 7 Institutional Impact				
<i>DLI 7.1 University-wide regional strategy</i>	0	(0 or 100)	100,000	0.00
<i>DLI 7.2a ACE host university adopts merit-based selection of university heads</i>	0	(0 or 100)	200,000	0.00
<i>DLI 7.2b ACE host university adopts merit-based selection of department heads</i>	0	(0 or 100)	50,000	0.00
<i>DLI 7.3a ACE host university adopts GAP analysis as part of international accreditation</i>	0	(0 or 100)	75,000	0.00
<i>DLI 7.3b ACE host university adopts self-evaluation as part of international accreditation</i>	0	(0 or 100)	75,000	0.00
<i>DLI 7.3c ACE host university adopts international accreditation</i>	0	(0 or 100)	200,000	0.00

<i>DLI 7.4 ACE host university participate in PASET</i>	0	(0, 50 or 100)	50,000/year	0.00
Total revenue expected triggered from ACE program				810,000
Additional government funding support				250,000
Other external revenue generation				0.00
Total Income				1,060,000

Table 3: Overview of expected activities and expenditures within the first project year

- *Most of the outputs listed in table 1 will require activities to achieve. Please bear this in mind when populating table 2.*
- *This table is closely linked to Section 7 of the Implementation Plan. Each activity listed in Table 2 will require a separate Activity Sheet to be completed in Section 7.*
- *For additional activities, please add rows as required to Table 2.*
- *Ensure that each course, research project and other activity is listed separately.*
- *Remember to set aside a budget for participation in ACE-Impact regional workshops.*
- *For new centers, be aware that procurement and civil works takes time. Planning and preparation should be initiated in year one, while actual procurement and initiation of civil work most likely won't happen before implementation year two.*
- *For new centers it is highly recommended to invest upfront in your partnerships. If you are planning a project launch workshop, invite all your key partners and set side a day or two to go through the Implementation Plan in detail with them to get their comments and ideas for improvement and to get their buy-in to the ACE.*
- *This table can be adjusted based on discussions with the partners (e.g. during the launch workshop). If adjustments are made to the approved Implementation Plan (IP), please share the updated IP with the AAU including a cover letter describing the adjustments made and the justification for these adjustments.*

Code	Priority Ranking	ACTIVITIES	ACE leader	Partners	Total
ACTION PLAN 1	(1 highest 5 lowest)	Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development			
DLI 1.1	1	Development of Implementation work plan	20,000	5,000	25,000
DLI 6.4	2	Pre-bid Conference	8,000	2,000	10,000
DLI 2	2	Securing University Senate recognition of ACE-SPED as a statutory University unit	5,000	5,000	10,000
DLI 1.2	1	Development of ACE-SPED website	5,000		5,000
DLI 1.5	1	Production and signing of MoUs/Launch of Center	50,000		50,000
DLI 2	4	Publication of ACE-SPED Journal, Bulletin and Newsletter.	2,000		2,000
DLI 4.3	1	Preparation of Building Plans and Award of Contract for ACE-SPED Service Core building complex	450,000		450,000

DLI 1.2	1	Scheduled ACE meetings (Int'l Advisory Board, Industrial Advisory Board, Management Committee Research and Academic Co-ordination)	16,000	4,000	20,000
DLI 4.3	2	Renovation of international scholars' hostels with appropriate furnishings, fittings and back-up power	200,000	35,000	235,000
		Sub-Total	756,000.00	51,000.00	807,000.00
Action Plan	(1 highest 5 lowest)	Strengthening Capacity to provide Student-Centered, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development	ACE leader	Partners	Total
DLI 3	1	Development and production of M.Eng/MSc and PhD curricula and students' handbook	10,000		10,000
DLI 3 & 4	2	Workshop with ACE-SPED partners on curricula	20,000	20,000	40,000
DLI 3 & 4	1	Securing approval of the M.Eng/MSc and Ph.D programs at the Postgraduate School and the University Senate.	2,000		2,000
DLI 3	1	Advertisement for intake of students	2,000		2,000
DLI 3	1	Selection and admission of M.Eng/MSc and PhD candidates.	2,000		2,000
DLI 4.3	2	Upgrading of facilities in the Seminar Room for visual learning, incl. video conferencing and webinars.	100,000		100,000
DLI 4.3	2	Renovation and upgrading of 5 no. classrooms, including the provision of teaching aids and back-up power solutions.	120,000		120,000
DLI 4	2	Training of Faculty on the use of multimedia teaching aids	12,000	5,000	17,000
DLI 3&4	3	Faculty and students' support	70,000	20,000	90,000
DLI 3	2	Provision of fellowships for MSc and PhD students including research costs to regional students.	56,000		56,000
DLI 3.3	2	Organization of short courses and workshops to address specific skill needs for industry	50,000	10,000	60,000
DLI 3.3	1	Language course for non-English speaking students	2,000		2,000

DLI 3	3	Development of educational materials for outreach programs.	3,560	240	3,800
DLI 3	3	Vocational outreach educational programs for secondary school students	1,000	200	1,200
DLI 4	3	Subscription to relevant international journals and databases.	3,000	1,000	4,000
DLI 3	2	On-site workshops and short trainings at ACE-SPED partner sites	400	10,000	10,400
DLI 4	2	Pursuit of International accreditation of M.Eng and Ph.D programs	450,000		450,000
		Sub/Total	903,960	66,440	970,400
Action Plan	(1 Highest 5 Lowest)	Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development	ACE leader	Partners	Total
DLI 4.1	1	Gap analysis survey to ascertain the research needs of the sector	10,000	10,000	20,000
DLI 5	3	Fabrication of relevant state-of-the-art R & D equipment	50,000	10,000	60,000
DLI 5	2	Capacity building of core team of Research Leads to head the thematic areas	60,000	10,000	70,000
DLI 5	2	Training of faculty and technical staff on use of state-of-the-art equipment	7,500	2,500	10,000
DLI 4&5	2	Training of safety and security personnel	1,600	600	2,200
DLI 5	2	Upgrading of Power and Energy Design Workshop	75,000	10,000	85,000
DLI 5	1	Development and review of research proposals in the thematic areas	400	1,000	1,400
DLI 4&5	3	Software development	1,000	2,000	3,000
DLI 3&4	2	Facilitate exchange and sharing of information and library resources between ACE-SPED and partners	500	3,500	4,000
DLI 2	1	Attendance to ACE-related meetings and events outside the University.	43,000	10,000	53,000
DLI 6	1	Annual procurement, financial and external audit reports	6,000		6,000
DLI 2	2	Organize regular planning meetings with ACE-SPED partners and major stake holders	4,000	1,000	5,000

DLI 5	3	Undertake industrial liaison visits	2,000	4,000	6,000
		Sub-Total	261,000.00	64,600.00	325,600.00
Action Plan4	(1 highest 5 lowest)	<i>ACE Action plan for Disbursement Linked Indicator 4(Expected output)</i>	<i>ACE leader</i>	<i>Partners</i>	<i>Total</i>
DLR 6	1	Third Party procurement process verification			0.00
DLR 6	1	Timeliness of procurement progress			0.00
DLR 6	1	Segmenting of UNN Bursary Accounting Software and dedicated server, computer and networking accessories for ACE-SPED financial separate reporting	12,475.00	3000	15,475.00
		Sub-Total	12,475.00	3,000.00	15,475.00
		GRAND TOTAL	1,933,435	185,040.00	2,118,475.00

Table 4: Overview of budget distribution among partners for year 1

- This table is a breakdown of the partner budget presented in Table 2
- The last column in Table 3 must match the second last column in Table 2
- Add rows and columns as required
- This table can be adjusted based on discussions with the partners (e.g. during the launch workshop). If adjustments are made to the approved Implementation Plan (IP), please share the updated IP with the AAU including a cover letter describing the adjustments made and the justification for these adjustments.

Code	Result/Activity/Task	Budget Estimate (US\$)					Total Partner Budget
		(write partner name)	(write partner name)	(write partner name)	(write partner name)	(write partner name)	
Action Plan 1	(Expected output)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Partners total of component)
<i>(Insert sub-component number)</i>	<i>(title of sub-component)</i>						
	<i>(Insert activity number)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list total partner amount for activity)</i>
	<i>(Insert activity number)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list total partner amount for activity)</i>
Action Plan 2	(Expected output)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Component total for partner)	(Partners total of component)
<i>(Insert sub-component number)</i>							
	<i>(Insert activity number)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list total partner amount for activity)</i>
	<i>(Insert activity number)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list amount)</i>	<i>(list total partner amount for activity)</i>

3. TIMING OF PLANNED ACTIVITIES FOR ENTIRE PROJECT PERIOD (Gantt chart)

World Bank ACE-SPED University of Nigeria, Nsukka

Year 1: 2019 Timeline by Months of the Year

Component 1: Services

Activities

- 1 Development of Implementation work plan
- 2 Development of ACE-SPED website
- 3 Scheduled ACE meetings (Int'l Advisory Board, Industrial Advisory Board, Co-ordination meetings)

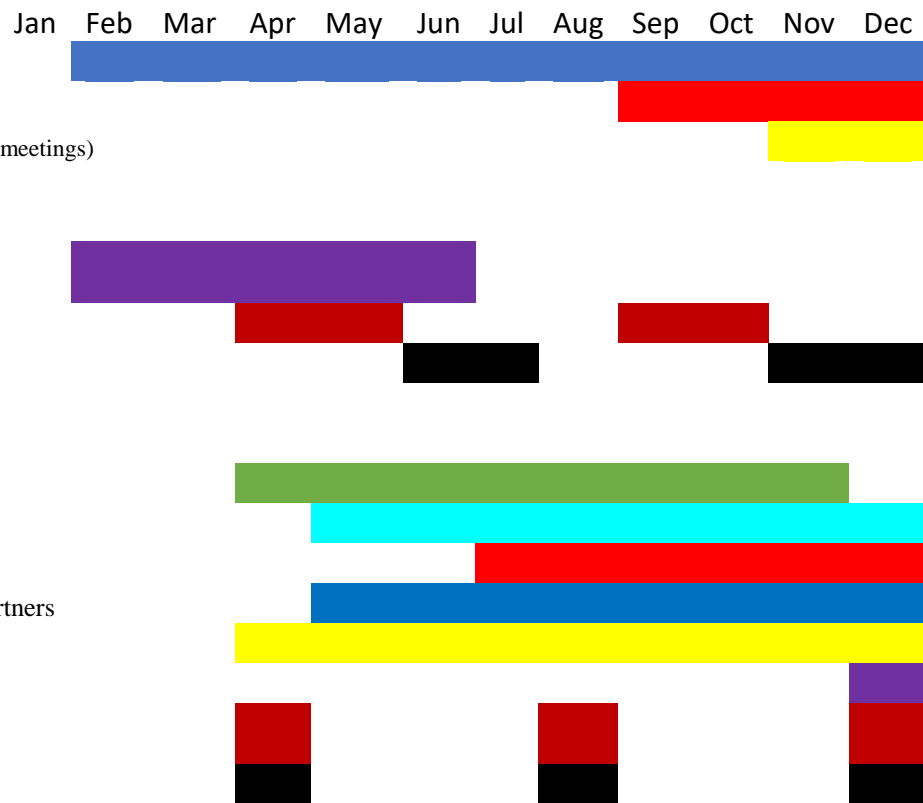
Component 2: Education

Development and production of M.Eng/MSc and PhD curricula and students'

- 1 handbook
- 2 Advertisement for intake of students
- 3 Selection and admission of M.Eng/MSc and PhD candidates.

Component 3: Research

- 1 Gap analysis survey to ascertain the research needs of the sector
- 2 Development and review of research proposals in the thematic areas
- 3 Organisation of seminars/workshops and publication in journals
- 4 Facilitate exchange and sharing of info. and lib. resources btw ACE-SPED and partners
- 5 Attendance to ACE-related meetings and events outside the University.
- 6 Annual procurement, financial and external audit reports
Organize regular planning meetings with ACE-SPED partners and major stake
- 7 holders
- 8 Undertake industrial liaison visits



World Bank ACE-SPED University of Nigeria, Nsukka

Year 2: 2020 Timeline by Months of the Year

Component 1: Services

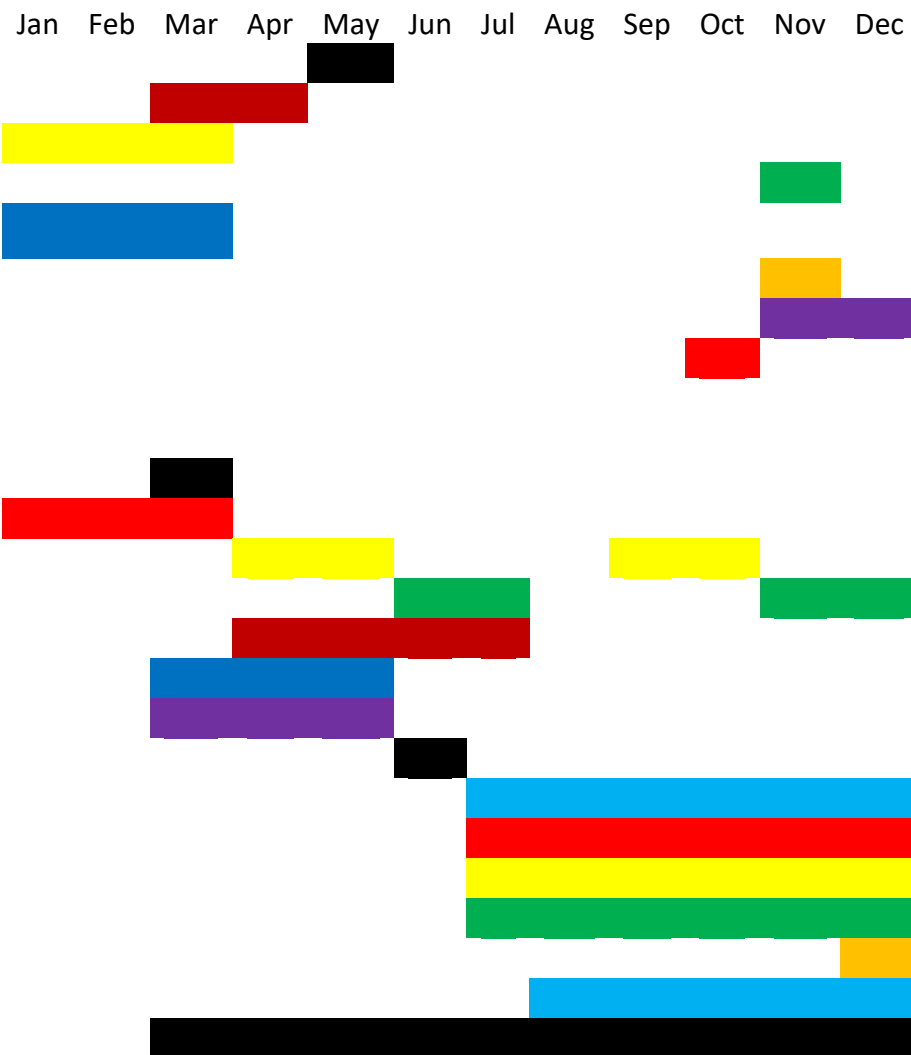
Activities

- 1 Pre-bid Conference
- 2 Securing UNN Senate recognition of ACE-SPED as statutory University unit
- 3 Production and signing of MoUs/Launch of Center
- 4 Publication of ACE-SPED Journal, Bulletin and Newsletter
- 5 Prep. of Building Plan and award of contract for ACE-SPED building complex
- 6 Procurement of Project Vehicles
- 7 Scheduled ACE meetings (Int'l Advisory Board, Ind. Advisory Board, Coordination, mtgs)
- 8 Renovation of int'l.scholars hostels with furnishings, fittings and back-up power

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Component 2: Education

- 1 Workshop with ACE-SPED partners on curricula
- 2 Securing approval of the M.Eng/MSc and Ph.D programs at PG Schl. and the UNN Senate.
- 3 Advertisement for intake of students
- 4 Selection and admission of M.Eng/MSc and PhD candidates.
- 5 Upgrading of UNN internet network (Lionet) for ACE-SPED facilities
- 6 Upgrading of facilities in Seminar Room for visual learning
- 7 Renovation and upgrading of 5 no. classrooms, etc
- 8 Training of Faculty on the use of multimedia teaching aids
- 9 Faculty and students' support
- 10 Provision of fellowships for MSc and PhD students including research costs
- 11 Organization of short courses and workshops to address specific skill needs
- 12 Language course for non-English speaking students
- 13 Development of educational materials for outreach programs.
- 14 Vocational outreach educational programs for secondary school students
- 15 Subscription to relevant international journals and databases. (Research4Life)



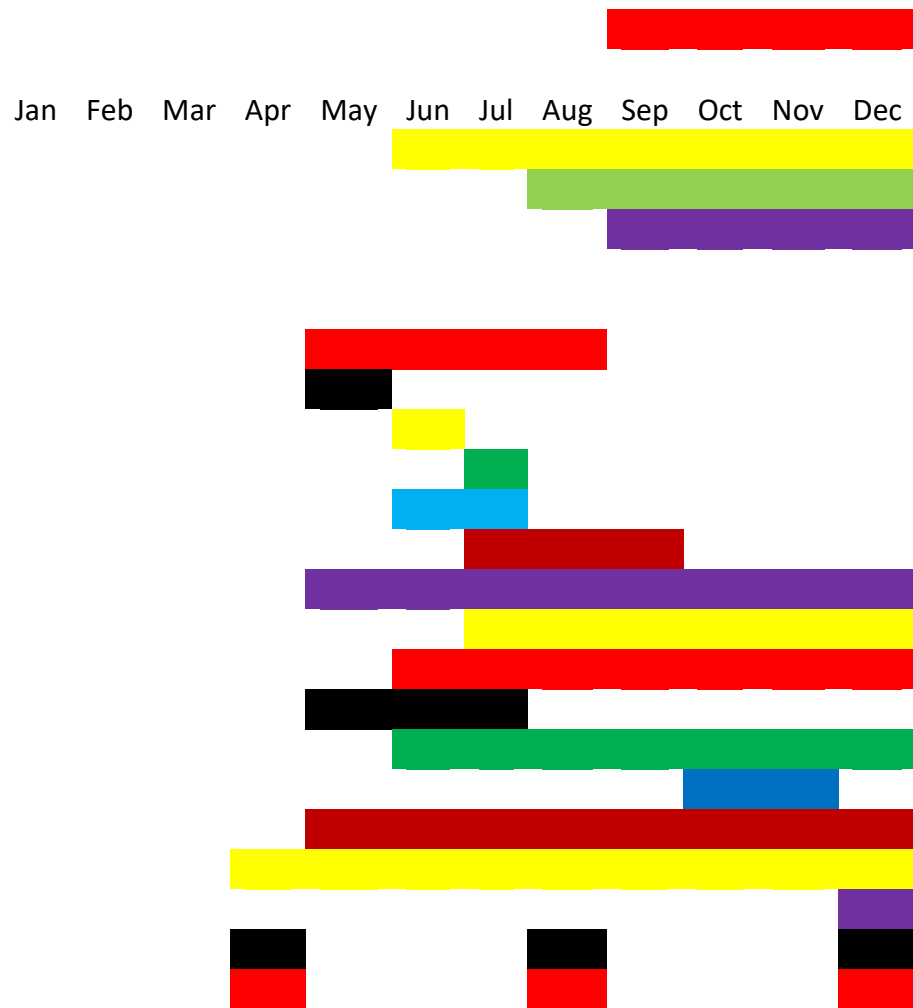
16 Outreach educational program for females and underserved communities
Component 2: Services

Activities

- 17 On-site workshops and short trainings at ACE-SPED partner sites
- 18 Staff exchange for sabbatical and visiting lectureship
- 19 Pursuit of International accreditation of M.Eng and Ph.D programs through HCRES

Component 3: Research

- 1 Fabrication of relevant state-of-the-art R & D equipment
- 2 Capacity building of core team of Research Leads to head the thematic areas
- 3 Training of faculty and technical staff on use of state-of-the-art equipment
- 4 Training of safety and security personnel
- 5 Upgrading of Laboratories (See activity sheets)
- 6 Upgrading of Power and Energy Design Workshop
- 7 Development and review of research proposals in the thematic areas
- 8 Organisation of seminars/workshops and publication in journals
- 9 Field trips
- 10 Field trials
- 11 Software purchase and development
- 12 Regional workshops
- 13 Facilitate sharing of info. and library resources between ACE-SPED and partners
- 14 Attendance to ACE-related meetings and events outside the
- 15 Annual procurement, financial and external audit reports
- 16 Organize regular planning meetings with ACE-SPED partners and stake holders
- 17 Undertake industrial liaison visits



World Bank ACE-SPED University of Nigeria, Nsukka

Year 3: 2021 Timeline by Months of the Year

Component 1: Services

Activities

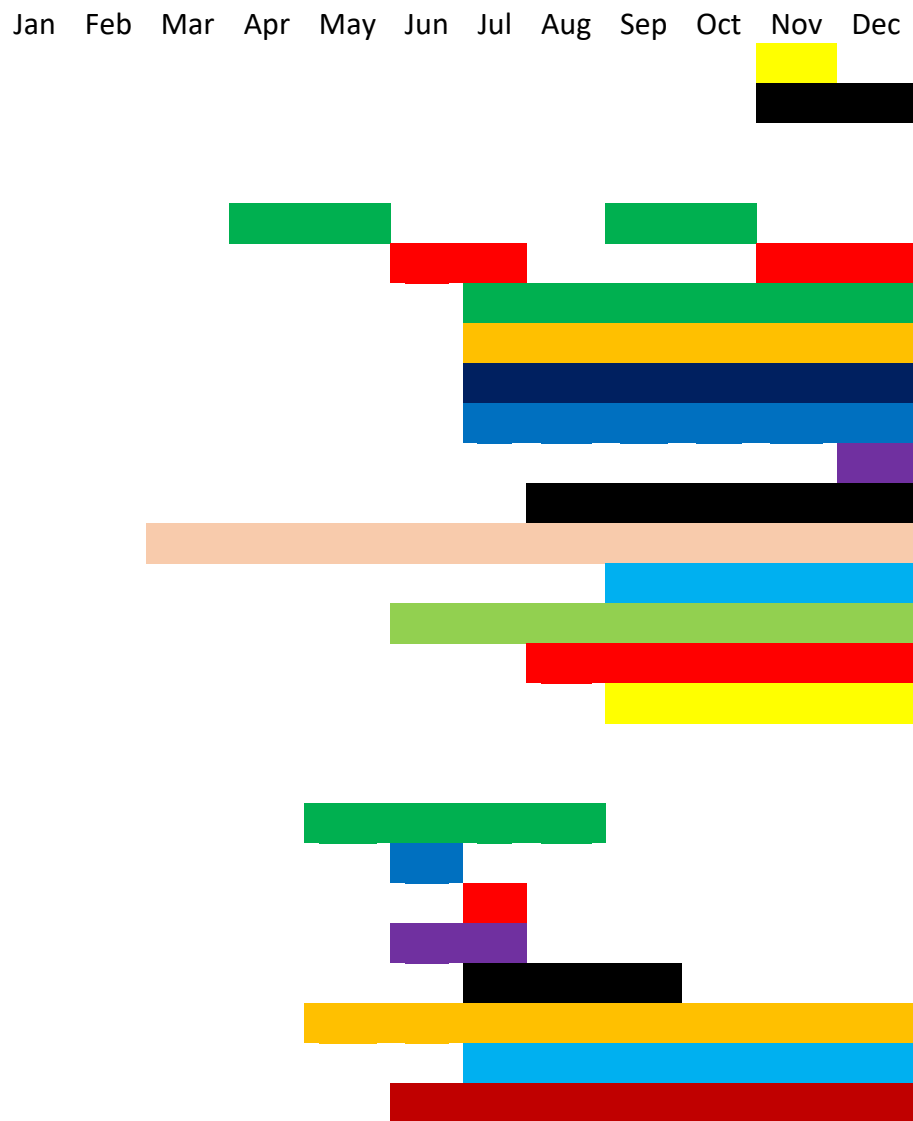
- 1 Publication of ACE-SPED Journal, Bulletin and Newsletter.
- 2 Scheduled ACE meetings (Int'l Advisory Board, Ind. Advisory Board, Coordination, mtgs)

Component 2: Education

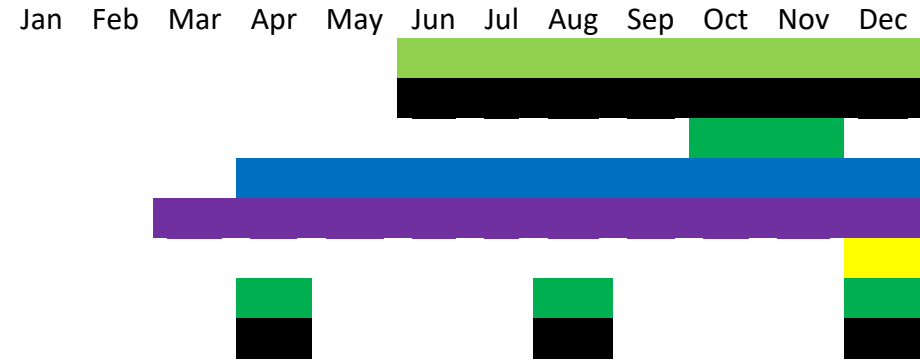
- 1 Advertisement for intake of students
- 2 Selection and admission of M.Eng/MSc and PhD candidates.
- 3 Faculty and students' support
- 4 Provision of fellowships for MSc and PhD students including research costs
- 5 Organization of short courses and workshops to address specific skill needs
- 6 Language course for non-English speaking students
- 7 Development of educational materials for outreach programs.
- 8 Vocational outreach educational programs for secondary school students
- 9 Subscription to relevant international journals and databases. (Research4Life)
- 10 Outreach educational program for females and underserved communities
- 11 Outreach educational program for females and underserved communities
- 12 Staff exchange for sabbatical and visiting lectureship
- 13 Pursuit of International accreditation of M.Eng and Ph.D programs through HCRES

Component 3: Research

- 1 Fabrication of relevant state-of-the-art R & D equipment
- 2 Training of faculty and technical staff on use of state-of-the-art equipment
- 3 Training of safety and security personnel
- 4 Provision of Equipment for Laboratories (see activity sheets)
- 5 Provision of Equipment for the Renewable Energy Laboratory
- 6 Upgrading of High Voltage Laboratory
- 7 Organisation of seminars/workshops and publication in journals
- 8 Field trips



- Activities
- 9 Field trials
 - 10 Software purchase and development
 - 11 Regional workshops
 - 12 Facilitate sharing of info. and library resources between ACE-SPED and partners
 - 13 Attendance to ACE-related meetings and events outside the University.
 - 14 Annual procurement, financial and external audit reports
 - 15 Organize regular planning meetings with ACE-SPED partners and stake holders
 - 16 Undertake industrial liaison visits



World Bank ACE-SPED University of Nigeria, Nsukka

Year 4: 2022 Timeline by Months of the Year

Component 1: Services

Activities

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 Publication of ACE-SPED Journal, Bulletin and Newsletter												
2 Scheduled ACE meetings (Int'l Advisory Board, Ind. Advisory Board, Coordination, mtgs)												

Component 2: Education

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 Advertisement for intake of students												
2 Selection and admission of M.Eng/MSc and PhD candidates.												
3 Faculty and students' support												
4 Provision of fellowships for MSc and PhD students including research costs												
5 Organization of short courses and workshops to address specific skill needs												
6 Language course for non-English speaking students												
7 Development of educational materials for outreach programs.												
8 Vocational outreach educational programs for secondary school students												
9 Subscription to relevant international journals and databases. (Research4Life)												
10 Outreach educational program for females and underserved communities												
11 On-site workshops and short trainings at ACE-SPED partner sites												
12 Staff exchange for sabbatical and visiting lectureship												

Component 3: Research

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1 Fabrication of relevant state-of-the-art R & D equipment												
2 Training of safety and security personnel												
3 Development and review of research proposals in the thematic areas												
4 Organisation of seminars/workshops and publication in journals												
5 Field trips												
6 Field trials												
7 Software purchase and development												
8 Regional workshops												
9 Facilitate sharing of info. and library resources between ACE-SPED and partners												

- 10 Attendance to ACE-related meetings and events outside the University.
- 11 Annual procurement, financial and external audit reports
- 12 Organize regular planning meetings with ACE-SPED partners and stake holders
- 13 Undertake industrial liaison visits



World Bank ACE-SPED University of Nigeria, Nsukka

Year 5: 2023 Timeline by Months of the Year

Component 1: Services

Activities

- 1 Publication of ACE-SPED Journal, Bulletin and Newsletter.
- 2 Scheduled ACE meetings (Int'l Advisory Board, Ind. Advisory Board, Coordination, mtgs)

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec



Component 2: Education

- 1 Advertisement for intake of students
- 2 Selection and admission of M.Eng/MSc and PhD candidates.
- 3 Faculty and students' support
- 4 Provision of fellowships for MSc and PhD students including research costs
- 5 Organization of short courses and workshops to address specific skill needs
- 6 Language course for non-English speaking students
- 7 Development of educational materials for outreach programs
- 8 Vocational outreach educational programs for secondary school students
- 9 Subscription to relevant international journals and databases. (Research4Life)
- 10 Outreach educational program for females and underserved communities
- 11 On-site workshops and short trainings at ACE-SPED partner sites
- 12 Staff exchange for sabbatical and visiting lectureship



Component 3: Research

- 1 Fabrication of relevant state-of-the-art R & D equipment
- 2 Training of safety and security personnel
- 3 Development and review of research proposals in the thematic areas
- 4 Organisation of seminars/workshops and publication in journals
- 5 Field trips
- 6 Field trials
- 7 Software development
- 8 Facilitate sharing of info. and library resources between ACE-SPED and partners
- 9 Attendance to ACE-related meetings and events outside the University



- 10 Annual procurement, financial and external audit reports
- 11 Organize regular planning meetings with ACE-SPED partners and stake holders
- 12 Undertake industrial liaison visits



4. IMPLEMENTATION ARRANGEMENTS

4.1 Guiding Policies, Rules and Regulations

Guiding rules and regulations for the ACE-SPED will be according to the University of Nigeria regulations. Activities of the centre will be conducted in a transparent manner at all times. The Centre will publish budgets, financial reports and audited accounts related to the project on the website of the Centre to enhance transparency and accountability. The centre shall maintain strategic partnerships, governed by MoUs, with academic, industrial and sectorial partners in public and private sectors.

The Centre will put in place an independent complaint handling mechanism where complaints will be made and responded to showing details including the time the complaint was reported and the time the response was made. The following units of the university provide adequate oversight function within the university:

- (a) Service Compatible with all Nigerians (SERVICOM)
- (b) Quality Assurance Unit
- (c) University Senate
- (d) University Governing Council

4.2 Governance Structures

(Briefly describe the ACE governance structure. Provide an updated Organization Chart including names and official titles. Describe the roles of the Sectoral Advisory Board and the International Scientific Advisory Board. Comment on the position of the Centre within the host institution. Please also provide insights into how (and which) key partners are involved in the governance of the ACE)

The centre will be administered according to the organizational chart in Figure 1 below. The specific role of each officer/personnel is hereby outlined.

- 1. Vice-Chancellor:** The Vice-Chancellor is the Chief Executive Officer of the university. The Vice-Chancellor will support the centre by providing space for centre's buildings and security personnel to safeguard the infrastructure.
- 2. ACE-SPED Centre Leader/Director:** ACE-SPED Centre Director is the Chief Executive Officer of the Centre who oversees the day to day activities of the centre and is responsible for providing direction for the centre towards achieving its objectives and set goals.

3. **ACE-SPED Deputy Centre Leader/Director:** The Deputy Centre Director assists the Director in the day to day running of the centre. He also acts on behalf of the Centre Leader/Director in his absence.
4. **Academic Program Coordinator:** The Academic Program Coordinator oversees the planning of academic program of the centre as well as admission matters.
5. **Applied Research Coordinator:** He/she oversees all research activities of the centre. He organizes seminars and workshops and oversees the development of research outputs of the centre in line with the approved workplan.
6. **Industrial Liaison Officer:** He/she is the anchor person linking the partner industries with the activities of the centre.
7. **Financial Management Coordinator:** He/she administers and monitors the financial system ensuring that all sundry finances are maintained in an accurate and timely manner.
8. **Administrative Team Leader:** Administrative Team Leader is in charge of all administrative matters relating to the project ensuring staff discipline and motivation.
9. **Monitoring and Evaluation (M&E) Officers:** They develop the overall framework of the M&E activities of the Centre including: monitoring of the work plan, budgeting and advice on performance indicators.
10. **Communication officers:** They are responsible for communication of the centre objectives and activities, operation of the website, etc, as directed by the centre leadership
11. **Procurement Officers:** They shall plan, prioritizes, assigns, supervises procurement of goods and services and also provides input on the Centre budget.
12. **Project Management Officers:**
13. **Internal Auditor:** He/she measures, evaluates and reports on the effectiveness and adequacy of financial procedures ensuring compliance with regulations and guidelines.
14. **Research Team Leaders:** Each of the Research Team Leaders coordinates an approved research theme in his/her area of research.

The Centre management team intends to motivate faculty members via the following incentives:

- (i) attendance to workshops and conferences conditional upon a conference proceeding being peer-reviewed and accepted for publication
- (ii) collaborative fellowships in partner organizations within the sub-region,
- (iii) specialized training in partner Industries, research centres and academic institutes
- (iv) Certification with relevant national and international professional bodies
- (v) Best Teacher Awards based on students' feedback.

The implementation team who will participate in the proposed ACE-SPED activities participated actively and collectively in the development of this proposal by (i) contributing technical ideas, (ii) liaising with university management for institutional information (iii) securing industrial/sectoral and academic institutional partners, (iv) preparing the draft proposal and final proposal.

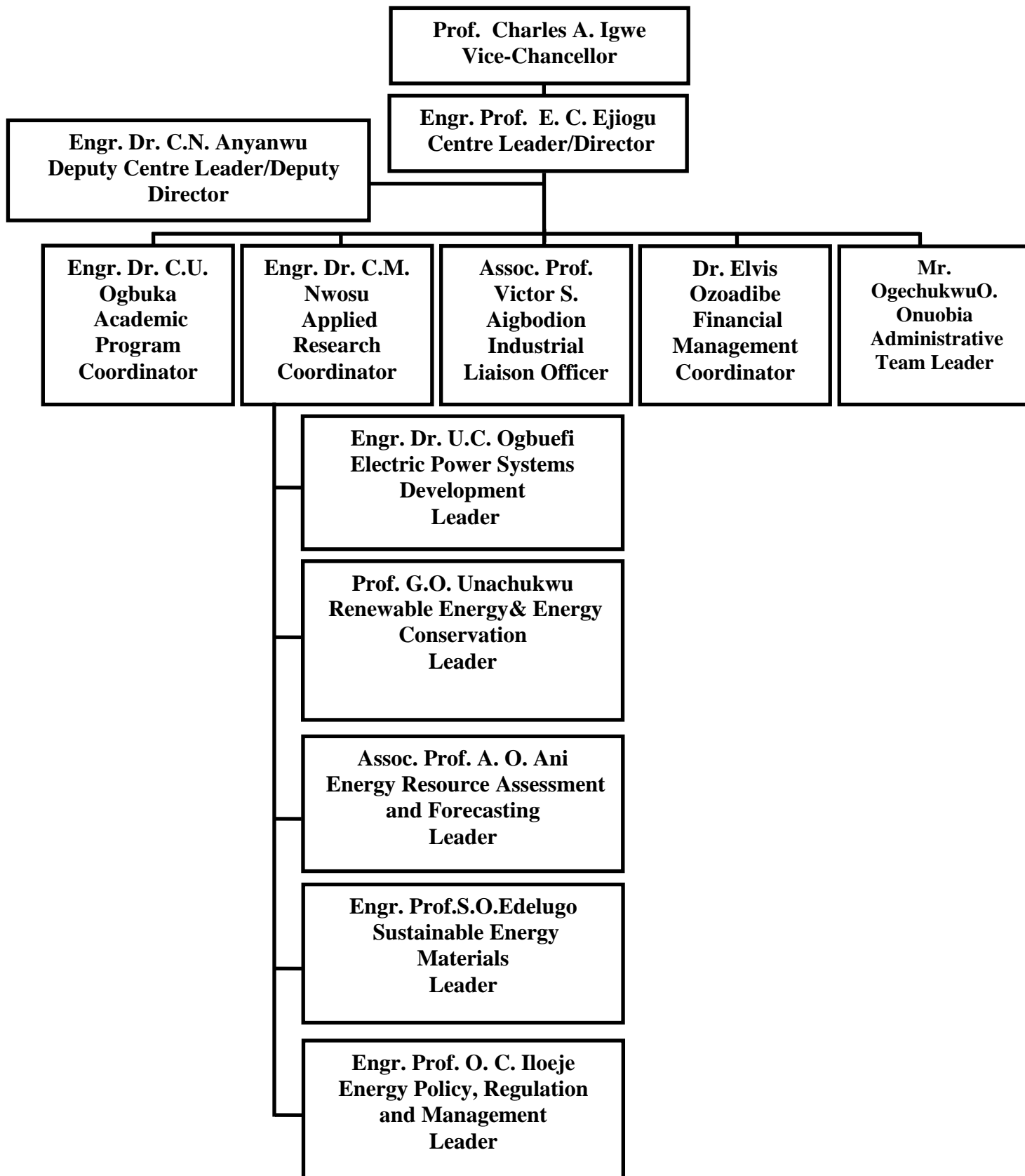


Figure 1: Centre Governance structure

4.3 Sectoral Advisory Board

Table 5: Sectoral Advisory Board

Name: Prof. Paulinus E. Ugwuoke	
Position/Title: Professor	Company/Organization: National Centre for Energy Research and Development Nsukka
Tel. #: +234(0)8065702570	Email: paulinus.ugwuoke@unn.edu.ng , ncerdunn@yahoo.com
Expertise: Renewable and Alternative Energy	
Anticipated Contribution: Industrial/Sectoral Partners	
Name: Mrs. Hiroko Kojima	
Position/Title: Executive Director	Company/Organization: MiraiDenchiInc, Japan
Tel. #: +234(0)7061157415	Email: miraidenchi.hd@gmail.com
Expertise: Power and Energy	
Anticipated Contribution: Industrial/Sectoral Partners	
Name: Engr. Prof. A. O. Ekwue	
Position/Title: Professor	Company/Organization: Jacobs Engineering Inc. London UK
Tel. #: +44(0)7535267242	Email: arthur.ekwue@jacobs.com
Expertise: Electric Power Systems	
Anticipated Contribution: Industrial/Sectoral Partners	
Name: Engr. Prof. S.N. Ndubisi	
Position/Title: Professor	Company/Organization: Scientific Equipment Development Institute (SEDI) Enugu
Tel. # +234(0)8032616466	Email: sedienugu@yahoo.com
Expertise: Power Devices and Renewable Energy Technologies	
Anticipated Contribution: Industrial/Sectoral Partners	
Name: Engr. P.O. Okeke	
Position/Title: Managing Director/CEO	Company/Organization: Enugu Electricity Distribution Company (EEDC)
Tel. # :+234(0)42293905	Email: www.enugudisco.com
Expertise: Electricity Distribution	
Anticipated Contribution: Industrial/Sectoral Partners	
Name: Engr. Dr. Charles N. Agulanna	
Position/Title: Director General/CEO	Company/Organization: Project Development Institute (PRODA) Enugu
Tel. #: +234(0)7086775503	Email: www.proda.gov.ng
Expertise: Engineering Project Development	
Anticipated Contribution: Industrial/Sectoral Partners	
Name: Mr. EmekaOkereke	
Position/Title: Director General	Company/Organization: Enugu Chamber of Commerce, Industry, Mines and Agriculture
Tel. #: +234(0)70367091103	Email: enuguchamber@yahoo.com
Expertise: Commerce	
Anticipated Contribution: Industrial/Sectoral Partners	
Name: Professor Umezuruike Linus Opara	
Position/Title: Executive Director/CEO	Company/Organisation: UNESCO International Centre for Biotechnology

	Kwame Nkrumah Way, University of Nigeria Nsukka Campus Enugu State, Nigeria
Tel. #: +234-9068 311 349	Email: unesco.icb.nigeria@gmail.com
Expertise: Bio-Mass Conversion System	
Anticipated Contribution: Industrial/Sectoral Partners	
Name: Ahmed Bolaji Nagode	
Position/Title: Director General/CEO	Company/Organisation: National Power Training Institute of Nigeria (NAPTIN)
Tel. #:	Email: info@naptin.gov.ng
Expertise: Training and Manpower Development in Power Sector	
Anticipated Contribution: Industrial/Sectoral Partners	
Name: Engr. Ochade M. Osekwe	
Position/Title: Managing Director/CEO	Company/Organisation: Nigerian Chambers of Commerce and Industry, Japan
Tel. #: +81-3-6300-6750 FAX : +81-3-6300- 6760	Email:
Expertise: Research Commercialization	
Anticipated Contribution: Industrial/Sectoral Partners	
Name: Engr. Prof. J.C. Agunwamba	
Position/Title: Director	Company/Organisation: National Centre for Equipment Maintenance and Development(NCEMD), University of Nigeria, Nsukka
Tel. #: +2348035644561	Email: jonah.agunwamba@unn.edu.ng
Expertise: Equipment Maintenance and Development	
Anticipated Contribution: Industrial/Sectoral Partners	

4.4 Sustainability

ACE-SPED will continue to sustain its program well after the funding period through a well-articulated sustainability plan. The plan will hinge on support from the university and industrial/sectoral partners on the one hand, and on a well-articulated internal revenue generating mechanism through short/refresher courses, consultancy and spin-off ventures in partnership with private/public sector stakeholders. The operations of ACE-SPED will be subjected to international best practices in monitoring and evaluation, at every stage of the program. In order to ensure that the project is sustained even after expiration of the expected World Bank funding, the following will be done:

4.4.1 Financial Sustainability

In order to realize the financial sustainability of the proposed Centre, external revenue generation model is of necessity beyond the grant period. ACE-SPED will have programs for revenue

generation through (i) Research commercialization via spin-off ventures e.g. Manufacturing of Insulators, anti-theft smart prepaid meters, sine wave inverters etc. Some of these devices are already at advanced stages of research and are mature for commercialization (ii) fee paying students and participants in short courses. We envisage admitting at least 10 fee-paying students starting from 2021. This can generate up to US\$ 3,000 annually for the Centre. (iii) Contract research and consultancy for industries, (iv) Patents and public/private partnerships etc. Moreover, at the inception of ACE-SPED, UNN will seek the University senate approval to recognize ACE-SPED as a statutory centre of the University to enable it receive annual budget allocation.

4.4.2 Ongoing Partnerships

The proposed ACE-SPED has at its disposal committed local and foreign industrial/sectoral partners who share the same vision as the centre and are willing to bring-in industry and innovative educational perspectives into the ACE-SPED program. An example is the MiraiDenchi Inc. Japan which sponsored a \$100,000 Solar electricity project at the Department of Electrical Engineering UNN and is currently co-financing a \$1,000,000 public/private partnership project on Medical Diagnostic Centre for the University of Nigeria. They have already committed to a joint research funding of \$500,000 over a five-year time frame and are willing to accept students and staff of ACE-SPED for internship subject to a signed MOU.

4.4.3 Continual Educational Opportunities for Students

ACE-SPED, through her institutional partners, will provide a platform for student mobility and exchanges. Currently the University is a participant in the AFRICOM network, DAAD, TRECCA-ACCAI etc. Some of these students will avail of their academic programs in ACESPED, which will generate income through fees payment for the Centre.

4.4.4 Ongoing Applied Research that addresses the Proposed Centre's Identified Development Challenges

The Faculty of Engineering is currently carrying out cutting edge researches within the following areas:

- (i) Anti-theft smart prepaid Electricity meters
- (ii) Benchmarking of Energy Consumption
- (iii) Sine Wave Inverters
- (iv) Advanced Control of Electric Machines
- (v) Solar crop drying systems and Solar Chicken Brooders,etc
- (vi) Gasification plant for Electricity Generation

(vii) Sustainable Engineering/EnergyMaterials using locally available materials

Some of these research activities will be demanded by our Sectoral partners and this will generate some revenue for ACESPED.

4.5 International Scientific Advisory Board

Table 6: International Scientific Advisory Board (Tentative)

Name: Prof. Ahmed F. Ghoniem	
Position/Title: Professor	University/Institution: Director, Centre for Energy and Propulsion Research, Massachusetts Institute of Technology (MIT) Cambridge Massachusetts USA.
Tel. #: (617) 253 2295	Email: ghoniem@mit.edu
Expertise: Energy Engineering	
Anticipated Contribution: International Scientific Advisory Board Member	
Name: Engr. Prof. Peter N. Kalu	
Position/Title: Professor	University/Institution: Florida A&M University - Florida State University
Tel. #: (850) 410-637	Email: kalu@magnet.fsu.edu
Expertise: Low Cost Manufacturing Initiative	
Anticipated Contribution: International Scientific Advisory Board Member	
Name Engr. Prof. A. O. Ekwue	
Position/Title: Professor	University/Institution: Jacobs Engineering Inc. London UK
Tel. #: +44(0)7535267242	Email: arthur.ekwue@jacobs.com
Expertise: Electric Power Systems	
Anticipated Contribution: International Scientific Advisory Board Member	
Name: Prof. Patricia Popoola	
Position/Title: Professor	University/Institution: Tshwane University of Technology, Pretoria, South Africa
Tel. #: +27843153902	Email: popoolaapi@tut.ac.za
Expertise: Energy materials	
Anticipated Contribution: International Scientific Advisory Board Member	
Name: Prof. Anthony Ogbonnayalbe	
Position/Title: Professor	University/Institution: University of Port Harcourt, Rivers State, Nigeria
Tel. #: +234(0)8033424325	Email: anthony.ibe@uniport.edu.ng
Expertise: Electric Power Systems	
Anticipated Contribution: International Scientific Advisory Board Member	
Name: Assoc. Prof. Dr Amos Madhlopa	
Position/Title: Associate Professor	University/Institution: University of Cape Town
Tel. #: +27 (0)21 650 3897	Email: amos.madhlopa@uct.ac.za
Expertise: Renewable Energy	
Anticipated Contribution: International Scientific Advisory Board Member	
Name: Prof E. T. Akinlabi	
Position/Title: Professor/Vice Dean	University/Institution: Faculty of Engineering and the Built Environment University of Johannesburg
Tel. #: +27115592137 & +27726566601	Email: etakinlabi@uj.ac.za
Expertise: Development of modern, advanced and sustainable materials	

Anticipated Contribution: International Scientific Advisory Board Member	
Name Prof.ChukwumerijeOkereke	
Position/Title: Professor	University/Institution: Dept. of Geography and Environmental Science, University of Reading, United Kingdom.
Tel. #: +447986757545	Email: c.okoreke@reading.ac.uk
Expertise: Environment Assessment	
Anticipated Contribution: International Scientific Advisory Board Member	

4.6 Institutional Impact

(Briefly describe the program of activities that will be undertaken to align the host institution with global best practices for higher education. Be sure to identify the baseline for these activities. ACE's has positively influenced their host institutions in different ways e.g.: More attention to gap analysis, self-evaluation and accreditation; training of faculty in university pedagogy and PG student supervision; more applied research designed and executed with sector partners; better financial management; more focus on external revenue generation; more attention to quality assurance; improved services of students; importance of skills training and maintenance when purchasing new equipment, use of virtual meetings to reduce travel cost; cleaner and more efficient procurement; etc.)

The University of Nigeria, Nsukka, established in October 1960, is the first full-fledged University in Nigeria and is a first-choice university within West and Central Africa. The University has remained the most globally visible university in the whole of the region. Her programs are tailored to make the university a centre of excellence for higher education and her graduates globally competitive. The university has 15 Academic Faculties and 102 academic departments and offers 82 undergraduate programs and 211 postgraduate programs.

A number of notable achievements have been recorded by both staff and students of the University. The following are some of the many examples which attest to this fact. The literary giant Chinua Achebe of late, and her current prodigy, ChimamandaAdichie, are both products of the University. The first open heart surgical operation in Nigeria and sub-Saharan Africa was undertaken in 1974 at the University of Nigeria Teaching Hospital (UNTH) Enugu. The Law Faculty of the University is the oldest in Nigeria, having been established in 1960 and has contributed immensely in legal education in Nigeria. The Department of Electronic Engineering was named a Centre of Excellence in Electronics by the Federal Government of Nigeria in 1982. The Faculty of Engineering is renowned for its quality graduates and runs some of the most sought after programs in the sub-region.

The institutional governance structure in the university provides for separation of power and checks and balances. The Vice-chancellor is at the helm of affairs assisted by three Deputies. There is a University Bursar responsible for University finances. A University Registrar is responsible for all administrative duties and support. A University Librarian is responsible for our NnamdiAzikiwe Library reputed as the largest and ICT-oriented Library in Sub-Saharan Africa. There are Deans of Academic Faculties and Directors of Centres and Institutes who are directly answerable to the Vice Chancellor. Heads of Departments are at the lowest level of the administrative structure.

The proposed ACE-SPED will further enhance on the merit-based Faculty recruitment process by inviting suitably qualified academics from across the region to provide impactful teaching and research activities.

In order to continue maintaining the highest quality of scholarship, the University of Nigeria is noted as the pioneer of the Post University Matriculation Examination (Post-UME). Consequently, potential candidates of ACE-SPED program shall be selected based on merit, while deemphasizing gender, race, religion, sex, and cultural background but with special consideration for women. As a matter of fact, the University of Nigeria is reputable with a very high completion rate of its enrolled studentship.

Meanwhile, for a university to stand out as a centre of excellence in teaching and research in the 21st century, it should have the capacity to attract students and seek partnerships both locally and internationally, with industry and colleagues in the academia, as well as provide support for state-of-the-art research and research engagements. The University of Nigeria has been in the forefront to maintain such as status, through its diverse student population, international faculty membership, research linkages and joint projects.

Besides, the need for information security has made the University's Management Information System (MIS) very robust to tackle its very complex student-staff organization. Here in the University of Nigeria, the MIS sub-unit which is under the ICT unit of the University, serves as a central database of all information and processes and operation within the university. The MIS provides for easy data logging and retrieval in accordance with the global standard.

Furthermore, the University of Nigeria has a library, the NnamdiAzikiwe University Library, which is considered to be the largest in Africa. This library was completed and commissioned on 5th June, 2009. The library is fully equipped and digitized with relevant resource and reference materials to aid research and learning at the highest level. Ever since it was commissioned, subsequent administrations have continued to maintain the high quality of this modern academic infrastructural masterpiece to rank among world-class institutional libraries. The University also has computerized internet-driven facilities which have enabled it not only to pioneer but to also mainstream the computer-based testing (CBT) in majority of the modules currently practiced. In addition, it should be noted that the University of Nigeria, maintains the most visible university in Nigeria and the whole of West Africa based on Google scholar citation of articles by her faculty. This drive is fully supported by the current administration by encouraging staff to publish their research in highly ranked peer-reviewed journals and conferences.

4.7 Incentive Structures and Mechanisms

ACE-SPED shall incentivize her staff to enable the attraction and retention of highly qualified and motivated manpower: both the Faculty and the Administrative staff. As a result, staff development shall be vigorously pursued from all fronts in view of the importance of staff development towards achieving the overall teaching and research objectives of ACE-SPED. The approaches are as follows:

- a) Collaboration fellowships in partner organizations within the sub-region.
- b) Specialized Training in partner Industries, research centres and institutes.
- c) Attendance to workshops and conferences to present technical papers.
- d) Industrial internships.
- e) Certification with one relevant national and one international professional bodies.

The growth of young academics to attain full professorial status within the centre shall also be a priority. Each young academic shall have a mentor within the same discipline who shall be tasked with mentoring responsibility. The outcome of this mentorship shall be measured through:

- a) Scholarly publications in peer-reviewed journals.
- b) International conference attendances for purpose of paper presentation.
- c) Development of patents.
- d) Successful postgraduate supervision.

Already in the University of Nigeria, Nsukka, the administration offers incentives to staff for publications in peer-reviewed journals. This same culture of incentives shall be sustained and strengthened in the proposed ACE-SPED. Again, the University of Nigeria Nsukka sponsors Faculty members to international conferences. This shall also be emulated by ACE-SPED. All publications emanating from ACE-SPED shall duly acknowledge the major sponsor of ACE-SPED, being the World Bank.

Administrative staff members shall be enrolled for certification programs with their relevant professional bodies for effective service delivery. Some of such professional bodies include:

- a) Administrative Staff Collage of Nigeria (ASCON).
- b) Institute of Chartered Accountants of Nigeria (ICAN)
- c) Certification with Nigeria Institute of Management (NIM).
- d) Institute of Industrial administration (IIA).

4.8 Roles and responsibilities of ACE team members

(Please fill the table below as well as prepare and attach as Annex 1. brief Terms of Reference (TOR) for each ACE team member and project financed support staff. Note that justification for not using existing university administrative and support staff is required. Having said that, it is still recommended to second or hire necessary support staff including a project coordinator to assist the project leadership with administration so centre leadership can focus on the academic quality of the project).

Table 7: Overview of Core Project Team:

Position	Qualification	Responsibilities
Centre Leader/Director (CL/D)	PhD/Professor	The CL/D oversees the day to day activities of the centre and is responsible for providing direction for the centre towards achieving its objectives and set goals. He makes approvals in accordance with the work plan of the centre.
Deputy Centre Leader/Deputy Director (DCL/DD)	PhD	The DCL/DD assists the CL/D in the day to day running of the centre. He also acts on behalf of the Director in his absence.
Academic Program Coordinator (APC)	PhD	The APC oversees the planning of academic program of the centre as well as admission matters.
Applied Research Coordinator (ARC)	PhD	The ARC oversees all research activities of the centre. He organizes seminars and workshops and oversees the development of research outputs of the centre in line with the approved workplan.
Research Team Leaders	Ph.D and Professors	Each of the Research Team Leaders coordinates an approved research theme in his/her area of research.

Industrial Liaison Officer	PhD/Associate Professor	He is the anchor person linking the partner industries with the activities of the centre.
Financial Officer	PhD	The Financial Officer administers and monitors the financial system ensuring that all sundry finances are maintained in an accurate and timely manner.
Administrative Team Leader	MSc	Administrative Team Leader is in charge of all administrative matters relating to the project ensuring staff discipline and motivation.
M&E Officers	PhD	The M & E officers develop the overall framework of the M&E activities of the Centre including: monitoring of the work plan, budgeting and advice on performance indicators.
Project Management Officers	BSc +	
Procurement Officers	BSc degree + 5 years' experience	The Procurement officers shall plan, prioritize, assign, supervise procurement of goods and services and also provide input on the centre budget.
Internal Auditor	BSc degree + 5 years' experience	He/she measures, evaluates and reports on the effectiveness and adequacy of financial procedures ensuring compliance with regulations and guidelines.
Environmental and Social Safeguards Officers	Msc/PhD	They are responsible for ensuring strict adherence to international environmental and social safety standards
Communication Officers	BSc degree + 5 years' experience	They are responsible for maintaining easy flow of information between the ACE and stakeholders as well as the general public. They are the image makers of the ACE. They are the custodian of the ACE website.

5. PERFORMANCE MONITORING

- *Please refer to the Project Appraisal Document (PAD) ANNEX 2: DLI Disbursement and Verification Protocols*
- *Insert the Results Framework shared with the RFU*

A. PROJECT DEVELOPMENT OBJECTIVE (PDO)

The monitoring and evaluation process of ACE-SPED will be tied to the project development objective as enunciated in the Project Appraisal Document (PAD).

PDO Statement

The PDO is to improve the quality, quantity and development impact of postgraduate¹ education in selected universities through regional specialization and collaboration.

PDO-Level Indicators

1. The PDO-level indicators are:
 - Number of students (national and regional) enrolled in postgraduate programs in the selected ACEs (Quantity of Education & Regional Specialization)
 - Number of ACE programs and ACE host institutions that obtain international accreditation (Quality of Education)
 - Number of ACEs that have substantial development impact (as measured by an independent evaluation of each centre's impact on development at mid-term and end of project)
 - Share of ACE host institutions with a comprehensive strategic plan for regionalization (Regional Specialization and Collaboration)
 - Number of students and faculty participating in internships and/or apprenticeships in relevant industry/sector institutions (Development Impact of Education)

Specifically, with respect to ACE-SPED, the progress and overall success of the project will be evaluated against the following indicators

- **Quantity of Education** - Number of students (national and regional) enrolled in ACE-SPED postgraduate programs.
- **Quality of Education** – Number of international accreditations and recognitions obtained by ACE-SPED
- **Substantial Mid-term, end of term and long-term development impact**
- **Regional Specialization and Collaboration** – strategic plan for regionalization by host institutions (University of Nigeria, Nsukka).
- **Development Impact of Education-** Number of students and faculty participating in internships and/or apprenticeships in relevant industry/sector institutions.

Disbursement-Linked Indicators As A Monitoring And Evaluation Guide

For this sub-component, the release of IDA funds will be linked to the achievement of seven disbursement-linked indicators (DLIs):

(a) Institutional readiness (DLI1)

Institutional readiness will be pursued and tracked in two levels as follows:

DLR #1.1 - Basic Readiness: Financing agreement is effective; Approved Implementation Plan and Procurement and Financial Management Manuals. Core centre staff designated

DLR# 1.2 - Full Readiness: At least one leading centre team member possesses a project management certification; Centre's website is functional, with student handbook on website; sectoral advisory board (SAB) constituted and has endorsed the Implementation Plan..

(b) development impact of the ACE Centre (DLI2)

Independent, external evaluation of the development impact of the ACE Impact centre conducted in Year 3 and beginning of Year 4. Core measures of impact include:

- (i) Relevance and impact of graduates on society, including the share of graduates hired in the target sector and feedback from key employers;
- (ii) relevance and impact of research on society;
- (iii) progress on DLIs;
- (iv) Sectorial Advisory Board (SAB) annual reports; and
- (v) interviews with centre graduates and sectoral stakeholders. The detailed scoring rubrics will be defined in the Project Operation Manual (POM).

(c) quantity of students with focus on gender and regionalization (DLI3);

This indicator will be monitored based on the following four categories of students: Reports will be sent to the RFU which will in turn transmitted to the independent verifier for verification and validation by students' surveys. Immediately upon conclusion of each admission exercise, students' data will be collected, collated and transmitted to the RFU within two weeks.

- DLR#3.1: New eligible PhD students
- DLR#3.2: New eligible master's students
- DLR#3.3: New eligible professional short course students
- DLR#3.4: For CoEngg & Emerging centres - New eligible first degree students

(d) Quality of education and research through regionalization (DLI4);

- DLR#4.1: Towards International accreditation with inputs from centre's advisory boards. Achievement of this indicator is validated by certificates or email confirmation of a specific accreditation or assessment (international, national, regional, gap assessment, self-evaluation.
- DLR#4.2: ACE Impact related research publications in internationally recognized peer reviewed journals. This is achieved if the article is accepted and published in an internationally recognized peer-reviewed journal acceptable to the World Bank and the RFU and in addition, an independent subject matter expert confirms that an ACE-SPED Impact student or staff is a co-author and that the article is in an area related to the specialization of the centre. The incentive is graded as follows:

US\$10,000 per article co-authored by ACE-SPED student/faculty and national partners;
US\$15,000 per article co-authored with regional partners.

ACE-SPED staff and students will be duly notified of this provision and will be encourage to notify the M&E office of acceptance of their article in a World-Bank recognized peer-reviewed journal for documentation and notification of the RFU.

- DLR#4.3: Completion of milestones for improved learning and research infrastructure specified in the approved Implementation Plan of each centre. This is achieved if external

verifiers confirm approved onsite civil works and equipment purchase, installation and usage.

(e) Relevance of education and research (DLI5)

The relevance of ACE-SPED education and research will be monitored under three categories as follows:

- DLR#5.1: Externally generated revenue
Each ACE impact centre is expected to generate revenue as a means of guaranteeing self-sustainability after World Bank funding tenure. ACE-SPED will generate revenue from the following sources
 - a. Students' fees
 - b. Joint research
 - c. Research consultancy
 - d. Fund raising from government, development partners and alumni
 - e. Competitive grants from prominent national (specifically TETFUND), regional and international funding organization.
 - f. Development and commercialization of research output
- DLR#5.2: Number of students and faculty with at least 1-month period internship in relevant sector institutions. Quarterly reports of students/faculty successful internship exposures in relevant industry/sector-relevant institutions will be the RFU
- DLR#5.3: Meeting milestones for developing entrepreneurship, innovation, start-up companies, and commercialization support programs.
The RFU will be kept abreast of progress on entrepreneurship, innovation, start-up companies and commercialization support programmes through constant progress report.

(f) timeliness and quality of fiduciary reporting (DLI6)

ACE-SPED will adhere to timelines provided by the World Bank and the RFU for fiduciary reporting. Prompt and transparent preparation of fiduciary report will remain on the front burners and will be monitored under the following categories.

- DLR#6.1. Timely financial reporting for the ACE account, including timely submissions of Interim Financial Reports (IFRs) and of audit reports for the period. This component requires a time stamp evidence of timely submission of the IFR, financial and procurement audit reports in the ACE impact online portal or copy of email submission to RFU in the event of unresponsive online portal.
- DLR#6.2. Functioning internal audit unit and functioning audit committee (under the university's council) that would support the centre and the ACE Impact host university. DLR 6.2 is achieved if the ACE-SPED submits weblink to internal audit report or attachment of report and a weblink to audit committee minutes or attachment of minutes which mention a review of the audit reports as well as a review by the university Board of the ACE hosting.
- DLR#6.3. Web Transparency on Fiduciary reports for the centre and the ACE Impact host university. DLR 6.3 is achieved if there is self-confirmation by the centre that the budget, annual work plan, IFRs, project financial and procurement audit reports are visibly accessible on the centre's and host institution's websites.
- DLR#6.4. Quality of procurement planning. Share of the originally approved procurement plan that was executed. **US\$15,000 per year for Quality of procurement planning**

(g) Institutional impact (DLI 7).- to be accomplished by ACE host institution.

- DLR#7.1: ACE Impact host institution develops and endorses a meaningful university- wide regional strategy (including student affairs).
- DLR#7.2: ACE Impact host institution undertakes open, merit-based competitive selection of department heads related to the ACEs and university head.
- DLR#7.3: ACE Impact host institution undertakes institutional wide international accreditation, gap assessments and self-evaluations
- DLR#7.4: ACE Impact host institution participates in the PASET Regional Benchmarking initiative and submits complete data on at least more than 85% of the required indicators and based on results, submits intervention plan to improve performance

DLR 6.4 The share is calculated in terms of value of contracts (not procurement activities); Amount US\$15,000 per year for Quality of procurement planning.

I. RESULTS FRAMEWORK AND MONITORING

A. Results Framework

Project Development Objectives(s)

To improve the quality, quantity and development impact of postgraduate education in selected universities through regional specialization and collaboration

PDO Indicators by Objectives / Outcomes	DLI	CRI	Unit of Measure	Baseline	End Target (Overall)	End Target (ACE-SPED)
Improve the quality, quantity and development impact of postgraduate education in selected univs.						
Number of students (National and Regional) enrolled in specialized master's, PhD and short-term professional courses/programs in the ACEs	✓		Number	0	7,750	248
Number of PhD students enrolled in specialized programs at ACEs	✓		Number	0	750	36
Number of master's students enrolled in specialized programs at ACEs	✓		Number	0	2,000	135
Number of Regional PhD students enrolled in specialized programs at ACEs	✓		Number	0	250	11
Number of Regional master's students enrolled in specialized programs at ACEs	✓		Number	0	750	45
Number of female PhD students enrolled in specialized programs at ACEs	✓		Number	0	250	10
Number of female master's students enrolled in specialized programs at ACEs	✓		Number	0	625	30
Number of students enrolled in professional short courses at ACEs	✓		Number	0	5,000	77
Number of ACE programs and ACE host institutions that obtain international accreditation	✓		Number	0	6	✓
Number of ACE programs that obtain international accreditation	✓		Number	0	5	✓
Number of ACE Host Institutions that obtain	✓		Number	0	1	✓

PDO Indicators by Objectives / Outcomes	DLI	CRI	Unit of Measure	Baseline	End Target (Overall)	End Target (ACE-SPED)
Improve the quality, quantity and development impact of postgraduate education in selected univs.						
international accreditation						
Share of ACE host institutions with a comprehensive strategic plan for regionalization	✓		Percentage	0	30	✓
Number of ACEs that have had substantial development impact	✓		Number	0	5	✓
Number of students and faculty participating in internships/apprenticeships in relevant industry/institution	✓		Number	0	2,000	181
Intermediate Results Indicators by Components	DL I	CR I	Unit of Measure	Baseline	End Target (Overall)	End Target (ACE-SPED)
Establishing new and scaling-up well-performing Africa Centers of Excellence for development impact						
Number of female center directors			Number	0	2	X
Number of ACE related research publications in internationally recognized peer reviewed journals	✓		Number	0	1000	62
Number of new nationally or regionally accredited programs (master's and PhDs)	✓		Number	0	30	✓
Amount in externally generated revenue by the ACEs	✓		Amount (USD)	0	25,000,000	745,000
Share of			Percentage	0	60	
Share of well-functioning regional networks led by ACEs			Percentage	0	30	✓
Number of ACE host institutions participating in the regional benchmarking initiative	✓		Number	0	5	✓
Fostering regional partnerships and scholarships						
Number of new master's and undergraduate students enrolled in programs at the Emerging centers	✓		Number	0	100	N/A
Number of new nationally or regionally accredited programs (master's and undergraduate) at emerging centers	✓		Number	0	8	N/A
Number of faculty and students participating in academic exchanges within the region from and to the emerging centers	✓		Number	0	70	N/A
Share of undergraduate and master's graduates of emerging centers employed within 6 months of graduating			Percentage	0	50%	N/A

Share of well-functioning regional networks supported by the project		Percentage	0	30%	N/A
Number of host institutions of emerging centers participating in the regional benchmarking initiative	✓	Number	0	1	N/A
Number of newly enrolled RSIF PhD students supported through the ACE Impact governments' contributions		Number	00	8060	
Number* of research papers submitted for publication to international indexed journals by RSIF students supported through funds transferred from the ACE Impact I Project to ICIPÉ		Number	20	304	50
Enhancing national and regional level project facilitation, and monitoring and evaluation					
Number of Project Beneficiaries	✓	Number	0	9500	
Level of satisfaction of the ACE students (Citizen Engagement indicator and part of the Grievance Redress Mechanism)		Number	0	3.0	
Level of satisfaction of the ACEs and the Steering Committee on the support given by the RFU and the WB ((Citizen Engagement indicator and part of the Grievance Resolution Mechanism)		Number	0	4.3	
Number of ACEs and emerging centers reporting to the RFU on at least 85 percent of the ACE Impact I Project indicators on time		Number	0	25	

Table 8: Disbursement Linked Indicators

Disbursement linked indicator (Max Allocation)	Action to be completed	DLR	2019	2020	2021	2022	2023	Subtotal
<u>DLI 1</u> DLI 1.1: Basic Readiness	Financing agreement is effective		300,000					600,000

	Approved Implementation Plan and Procurement and Financial Management Manuals.							
	Core center staff designated							
DLI 1 DLI 1.2: Full Readiness	At least one leading center team member possesses a project management certification							
	Center's website is functional, with student handbook on website							
	sectoral advisory board (SAB) constituted and has endorsed the Implementation Plan		300,000					
Subtotal			600,000					
DLI 2 Development Impact of ACE Center	Independent external evaluation to ascertain (i)Relevance and impact of graduates on society, including the share of graduates hired	Progress to impact			4			200,000

	in the target sector and feedback from key employers; (ii) relevance and impact of research on society; (iii) progress on DLIs; (iv) SAB annual reports; (v) interviews with center graduates and sectoral stakeholders. The detailed scoring rubrics will be defined in the POM.	Developmental impact					4	
Subtotal						100,000	100,000	
DLI 3								
Quantity of students	DLR#3.1: New eligible PhD students							
			2019	2020	2021	2022	2023	
	▪ New eligible national female PhD students			1	1	2	2	
	▪ New eligible national male PhD students			3	5	5	6	
	▪ New eligible Regional female PhD students			1	1	1	1	
	▪ New eligible Regional male PhD students			1	2	2	2	
	DLR#3.2: New eligible master's students							
			2019	2020	2021	2022	2023	
	New eligible national female master's students		-	5	5	5	5	
	▪ New eligible national male master's students		-	17	19	17	17	
▪ New eligible Regional female master's students		-	2	3	3	2		

	▪ New eligible Regional male master's students	-	5	9	10	11	
	DLR#3.3: New eligible professional short course (PSC) students						
		2019	2020	2021	2022	2023	
	▪ New eligible national female PSC students			4	5	4	
	▪ New eligible national male PSC students			13	15	14	
	▪ New eligible Regional female PSC students			2	2	2	
	▪ New eligible Regional male PSC students			5	6	5	
		100,000	134,600	188,300	198,900	215,200	837,000
DLI 4 Quality of Education and Research through Regionalization	DLR#4.1: Towards International accreditation with inputs from center's advisory boards						
		2019	2020	2021	2022	2023	
	▪ International accreditation				1		
	▪ National/Regional Accreditation			2	1		
	▪ Self evaluation		1				
	DLR#4.2: ACE Impact related research publications in internationally recognized peer-reviewed journals						
		2019	2020	2021	2022	2023	
	Articles co-authored by ACE-SPED student/faculty and national partners	5	10	10	10	15	
	Articles co-authored by ACE-SPED student/faculty and regional partners		3	3	3	3	
	DLR#4.3: Completion of milestones for improved learning and research infrastructure						
	2019	2020	2021	2022	2023		

	<p>a Renovation and upgrade of classrooms and seminar rooms, and provision of internet access to ACE-SPED facilities</p> <p>b Provision of video conferencing facilities</p> <p>c Provision of overhead projectors and screen</p> <p>d Provision of public address system</p> <p>Teaching aids</p>							
	<p>a Construction and equipping of ACE-SPED service core complex</p> <p>b Preparation of working drawings and quantities</p> <p>c Detailed EIA</p> <p>d Approval of building plan</p> <p>e Pre-bid conference</p> <p>f Call for tender</p> <p>g Tender opening and evaluation documents.</p> <p>h Awarded of Contracts</p> <p>Construction and commissioning</p>							
	Subtotal	50,000	545,000	645,000	545,000	195,000	1,980,000	
DLI 5 Relevance of Education and Research	DLR#5.1: Externally generated revenue							
	Year	2019	2020	2021	2022	2023		
	From national non-firm sources		55,000	60,000	60,000	80,000		
	From regional/private sectoral sources		100,000	120,000	130,000	140,000		
	DLR#5.2: Number of students and faculty with at least 1-month period internship in relevant sector institutions							
	Number of students with at least 1-month internship or staff with placement nationally		20	21	25	30	31	
Number of students with at least 1-month internship or staff with placement regionally		10	10	11	11	12		

	DLR#5.3: Number on new entrepreneurship, innovation, start-up companies, and commercialization support programs				1		1	1,153,000
DLI 6 Timeliness /quality of FM	DLI 6: Timeliness/quality of FM							255,000
	Year	2019	2020	2021	2022	2023		
	DLR#6.1: Timely submissions of Interim Financial Reports (IFRs)		1	1	1	1		
	DLR#6.2: Functional internal audit unit and functioning audit committee (under the university's council) that would support the center and the ACE Impact host university	1	1		1	1		
	DLR#6.3: Web Transparency <ul style="list-style-type: none"> ▪ Submission of weblink to internal audit report or attachment of report to RFU ▪ Submission of weblink to committee minutes or attachment of minutes of review of audit process by University of Nigeria Audit Board ▪ ACE-SPED budget visible on ACE-SPED and University of Nigeria websites ▪ ACE-SPED annual workplan (with Gantt chart) visible on ACE-SPED and University of Nigeria websites ▪ ACE-SPED interim financial report (IFR) visible on ACE-SPED and University of Nigeria websites 	1	1	1	1	1		
	DLR#6.4: Quality of procurement		1	1	1	1		
	Subtotal	30,000	60,000	45,000	60,000	60,000		
DLI 7:	Year	2019	2020	2021	2022	2023		

Institutional Impact	DLR#7.1: University regional strategy		1				
	DLR#7.2 (a): Competitive section of univeristy heead	1					
	DLR#7.2 (b): Competitive section of Dean		1				
	DLR#7.3 (a): Institutional accreditation						
	DLR#7.3(b): Gap assessment/self-evaluation				1		
	DLR#7.4: PASET benchmarking		1				
	DLR#7.5: Miestones for institutional impact					1	
	DLR#7.6: ICT services for innovation, teaching and research		1	1	1	1	
	Subtotal	200,000	200,000	200,000	175,000	200,000	975,000
TOTAL							6,000,000

1. BUDGET OVERVIEW FOR ENTIRE PROJECT PERIOD

Table 9: Indicative budget, (2020 – 2024) with split between partners

Expenditure Category	Estimated Costs in (US\$)											
	YR1		YR2		YR3		YR 4		YR5		Total	%of total
A: Budget by Activity Plan												
	ACE-SPED	PATNER	ACE-SPED	PATNER	ACE-SPED	PATNER	ACE-SPED	PATNER	ACE-SPED	PATNER		
Action Plan 1: Capacity to provide relevant and quality services for ACE-SPED	25,000	42,000	1,510,000	0	1,010,000	0	7,680,000	0	10,000	0	3365000	17.83%
Action Plan 2: Strengthen capacity to provide student centred-education services for ACE-SPED	10,000	498,000	1,178,000	425,200	1,176,800	425,200	1,176,800	425,200	1,176,800	425,200	8478200	44.93%
Action Plan 3: Strengthen capacity to provide robust need-driven research with strong practice orientation for ACE -SPED	146,000	312,500	1,142,000	325,500	1,347,000	105,500	347,000	105,500	347,000	105,500	4283500	22.7%
Action Plan 4: Management and Governance	587,000	101,000	530,000	96,000	380,000	96,000	380,000	96,000	380,000	96,000	2742000	14.53%
Contingency	0	0	0	0	0	0	0	0	0	0		
TOTAL	768,000	953500	4360000	846700	2913800	626700	1913800	626700	1913800	626700	18868700	100%
% of budget	14.96%	5.1%	23.1%	4.9%	22.14%	3.32%	10.14%	3.32%	10.14%	3.32%	100%	
B: Budget by partners												
UNIVERSITY OF NIGERIA, NSUKKA												
(Name of partner)												
(Name of partner)												
TOTAL	14.96%	5.1%	23.1%	4.9%	22.14%	3.32%	10.14%	3.32%	10.14%	3.32%	100%	

6. DETAILED ACTIVITY SHEETS (one for each activity)

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarter 1 of Year 1 (1st February 2019 -31st December 2019)

Activity: DLI 1.1: Basic Readiness

Sub-Activity/Task: Development of Implementation Work plan

ACTIVITY	Development of Implementation work plan						
OUTPUT	A detailed and focused work plan developed and produced						
OUTPUT INDICATOR: Detailed work plan produced					SOURCE OF VERIFICATION Copies of work plan made available		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Work plan produced and ready for approval Justification: The work plan forms a focal point to assist in accountability and smooth operations of the program						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	CL,						
DURATION: 2 months	Commencement: 1 st February 2019			Completion: 31 st December 2019			
PRIMARY CONSTITUENTS: ACE-SPED, University of Nigeria, NUC, WB				PARTICIPANTS:CL; DCL and all Core Centre staff designates			
ASSUMPTIONS	University Management/ National Universities Commission and core centre staff designates are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Development of implementation work plan	1,000	5,000	15,000	4,000		25,000
2							
3							
4							
5							
TOTALS							25,000

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarter 1 of Year 2(1st – 31st May, 2020)

Activity: DLI 6.4: Quality of procurement Planning

Sub-Activity/Task: Pre-bid Conference

ACTIVITY	Pre-bid Conference						
OUTPUT	Enhanced competitiveness of the bidding process achieved						
OUTPUT INDICATOR: Transparent and value-for money procurement					SOURCE OF VERIFICATION Names of bidders and minutes of the bid process available		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Potential bidders adequately sensitized on WB procurement procedures and guidelines Transparency of process achieved <p>Justification: This is necessary to ensure transparency, proper understanding and smooth operations of the WB procurement process</p>						
PROCUREMENT	Hardware; Software; equipment; consultancies procurement referenced						
RESPONSIBILITY FOR IMPLEMENTATION	Procurement Officer,						
DURATION: 1 month	Commencement: 1 st May 2020			Completion: 31 st May 2020			
PRIMARY CONSTITUENTS: ACE-SPED, University of Nigeria, NUC, WB				PARTICIPANTS: Bidders; Partners; Procurement Officer; CL; DCL; SERVICOM			
ASSUMPTIONS	Bidders are better informed and aligned to WB procedures and guidelines						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Pre-Bid Conference		10,000				10,000
2							
3							
4							
5.							
TOTALS							10,000

*This is necessary to ensure transparency, proper understanding and smooth operations of the WB procurement process by bidders

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarter 2 of Year 2 (1st March-30th April 2020)

Activity: DLI 2: Development Impact

Sub-Activity/Task: Securing University Senate recognition of ACE-SPED as a statutory University unit

ACTIVITY	Securing University senate recognition of ACE-SPED as a statutory University unit						
OUTPUT	Recognition of ACE-SPED as a statutory unit achieved and ownership by the University						
OUTPUT INDICATOR: Visibility and ownership of ACE-SPED by the University documented					SOURCE OF VERIFICATION Documentation of ownership of ACE-SPED by the University		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> ACE-SPED recognized and documented Justification: This is to ensure sustainability, visibility and ownership of ACE-SPED by the University						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 1 month	Commencement: 1 st March 2020			Completion: 30 th April, 2020			
PRIMARY CONSTITUENTS: ACE-SPED, University of Nigeria; NUC				PARTICIPANTS: ACE-SPED; University of Nigeria, NUC			
ASSUMPTIONS	University of Nigeria supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Securing University senate recognition of ACE-SPED as a statutory University unit						1000
2							
3							
4							
5.							
TOTALS							1000

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarter 4 of Year 2 (1st October 2019 -31st December 2019)

Activity: DLI 1.1 Development of ACE-SPED website

Sub-Activity/Task:

ACTIVITY	Development of ACE-SPED website						
OUTPUT	ACE-SPED website operationalized						
OUTPUT INDICATOR: ACE-SPED website operationalized hosting activities and students' handbook					SOURCE OF VERIFICATION Functional ACE-SPED website		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Website functional and hosting ACE-SPED activities Justification: This to provide easy tracking of the programs of the Centre and feedback from stakeholders						
PROCUREMENT	Hardware; Software; equipment; consultancies and procurement referenced						
RESPONSIBILITY FOR IMPLEMENTATION	Information Officer,						
DURATION: 1 month	Commencement: 1 st October 2019			Completion: 31 st March 2020			
PRIMARY CONSTITUENTS: ACE-SPED, University of Nigeria, NUC, WB				PARTICIPANTS: ACE-SPED; NUC, WB; Partners and the public			
ASSUMPTIONS	Access to internet broad band and accessories						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Development of ACE-SPED Website				10,000			10,000
2							
3							
4							
5.							
TOTALS							10,000

*This is to provide easy tracking of the programs of the Centre and feedback from stakeholders

Target DLI: Readiness
Timeframe: Quarter 2 of Year 2 (March 2020- June 2020)
Activity: DLI 1.1: Basic Readiness
Sub-Activity/Task: Financing Agreement is effective

ACTIVITY	Basic Readiness						
OUTPUT	Financing agreement is effective; completion and roll out of basic readiness documents						
OUTPUT INDICATOR	Financing agreement is effective, approved implantation plan and procurement and financial manuals, core centre staff designated.				SOURCE OF VERIFICATION Copies of financing agreement, approved implementation plan and procurement and financial management manuals. Core centre staff designated and letters issued		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Preparation of the financing agreement. Implementation plan and procurement and financial management manuals submission for approval by WB designates Preparation and issuance of letters to designated core centre staff 						
PROCUREMENT	Centre Leader to facilitate the financing agreement; implementation plan approval; procurement and financial manuals and letters to core centre staff						
RESPONSIBILITY FOR IMPLEMENTATION	CL, DCL, financial management coordinator officer.						
DURATION: 4 months	Commencement: 20 th March 2020			Completion: 30 th June 2020			
PRIMARY CONSTITUENTS: ACE SPED, University of Nigeria, National Universities commission, FGN	PARTICIPANTS: Core Centre staff designates						
ASSUMPTIONS	University Management/ National Universities Commission and core centre staff designates are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	3.7% of grant						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 International/local travels, accommodation, entertainment for local and foreign advisory board members.	45000						45000
2 Tea breaks and basic overheads for ACE-SPED project team meetings for development of Financial, Procurement, Student and Sexual Harassment Manuals/Handbooks.	6000						6000
3							
4							
TOTALS	51000						51000

Target DLI: Full Readiness

Timeframe: Quarter 3 of Year 1 (May 2019- October 2019)

Activity: DLI 1.2: Full Readiness

Sub-Activity/Task: Project Management Certification; SAB Meeting to endorse Implementation Plan

ACTIVITY	Full Readiness						
OUTPUT	At least one leading centre team member possesses a project management certification; Centre's website is functional, with students' handbook on website; sectoral advisory board (SAB) constituted and has endorsed implementation plan						
OUTPUT INDICATOR	Leading centre staff designate possess project certification; Centre's website functional; Students' handbook on website; sectoral advisory board constituted and implementation plan endorsed			SOURCE OF VERIFICATION Centre staff possesses project management certification; website functional; students' handbook on website; board constituted and implementation plan endorsed			
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Centre staff possesses project management certification; Centre's website functional; Students' handbook on website; Sectoral board constituted; Implementation plan endorsed 						
PROCUREMENT	CL, DCL facilitate full readiness; constitution of sectoral board and endorsement of implementation plan; communication officer creates functional website; academic programme coordinator procures students' hand book.						
RESPONSIBILITY FOR IMPLEMENTATION	CL, DCL, communication officer; academic coordinator.						
DURATION:	Commencement: (2 nd May 2019)			Completion: 31 th October 2019			
PRIMARY CONSTITUENTS: ACE SPED, University of Nigeria, National Universities commission, FGN	PARTICIPANTS: Core Centre staff designates, sectoral board members						
ASSUMPTIONS	Centre Management; National Universities Commission and core centre staff designates are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE							
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Project certification		3000					3000
2 Students' handbook		1500					1500
2 International/local travels, accommodation, entertainment for local and foreign advisory board members.		45000					45000
3 License for Website Hosting		5000					5000
4 Upgrade of Accounting Software		5000					5000
5							
TOTALS							59,500

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarter 1 of Year 2 (1st January – 31st March 2020)

Activity: DLI 1: Full Readiness

Sub-Activity/Task: Production and Signing of MoUs/ Launch of Centre

ACTIVITY	Production and Signing of MoUs/ Launch of Centre						
OUTPUT	A robust and benefit-oriented MoUs signed with partners and centre launched						
OUTPUT INDICATOR: MoUs signed and Centre launched					SOURCE OF VERIFICATION Copies of signed MoUs and events brochures		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> MoUs signed Centre launched <p>Justification: This will ensure robust and well-defined benefit-oriented partnerships that will deliver anticipated outcomes/publicity of center take off.</p>						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 4 months	Commencement: 1 st March 2020			Completion: 30 th June, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; University of Nigeria, NUC, WB			PARTICIPANTS: ACE-SPED staff; UNN; NUC; WB; media houses.				
ASSUMPTIONS	Partners, NUC, UNN, news media are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Production and signing of MoUs/ Launch of Centre	50,000					50,000
2							
3							
4							
5.							
TOTALS		50,000					50,000

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarter 1 of Year 2 (1st February 2020 -31st December 2020)

Activity: DLI 4 & 5: Quality of Education and Relevance of Research

Sub-Activity/Task: Procurement of Project Vehicles

ACTIVITY	Procurement of project vehicles						
OUTPUT	Project vehicles procured						
OUTPUT INDICATOR: Detailed work plan produced						SOURCE OF VERIFICATION Project vehicles made available	
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Project vehicles purchased and ready for use Justification: The vehicles will assist in day-to-day running of the Centre’s activities						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	CL,						
DURATION: 2 months	Commencement: 1 st February 2020			Completion: 31 st December 2020			
PRIMARY CONSTITUENTS: ACE-SPED, University of Nigeria, NUC, WB				PARTICIPANTS:CL; DCL and all Core Centre staff designates			
ASSUMPTIONS	University Management/ National Universities Commission and core centre staff designates are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Procurement of 4x4 Vehicle							100,000
2 Procurement of Salon Car							60,000
3							
4							
5							
TOTALS							160,000

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarter 4 of Year 2, 3, 4 and 5 (November -December each year)

Activity: DLI 2: Development Impact

Sub-Activity/Task: Publication of ACE-SPED journal, Bulletin and Newsletter

ACTIVITY	Publication of ACE-SPED journal, Bulletin and Newsletter						
OUTPUT	ACE-SPED journal, Bulletin and Newsletter published						
OUTPUT INDICATOR: Published journal, Bulletin and Newsletter available in both soft and hard copies	SOURCE OF VERIFICATION On-line and hard copies of ACE-SPED journal, Bulletin & Newsletter available						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Activities of ACE-SPED visible with global reach Greater societal impact achieved <p>Justification: The production of ACE-SPED journal, bulletin and Newsletter will create a wider reach of the activities, enhance visibility and engender anticipated societal impact.</p>						
PROCUREMENT	Hardware; Software; equipment; consultancies procurement referenced						
RESPONSIBILITY FOR IMPLEMENTATION	ARC						
DURATION: 2 months	Commencement: November			Completion: 31 st December			
PRIMARY CONSTITUENTS: ACE-SPED, University of Nigeria, NUC, WB, general public	PARTICIPANTS: Partners; Consultants; Scientific community and the general public						
ASSUMPTIONS	ACE-SPED staff are supportive.						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Publication of ACE-SPED bulletin/Newsletter			20,000			20,000
2							
3							
4							
5.							
TOTALS				20,000			20,000

***Publication will be mostly electronic**

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarter 1 of Year 2 (January – March 2020)

Activity: DLI 4.3: Infrastructure Improvement for Research and Learning (Civil Works)

Sub-Activity/Task: Preparation of Building plans and Award of Contract for ACE-SPED Service Core building complex

ACTIVITY	Preparation of Building plans and award of contract for service core building complex						
OUTPUT	Drawing of building plans completed, contact awarded						
OUTPUT INDICATOR: Building completed and awarded					SOURCE OF VERIFICATION Building plan, drawing and contract award letter available		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Building plans completed, Bidding concluded and contract awarded Justification: Contract for building of ACE-SPED service core building complex will create visibility, a sense of worth and enhanced productivity as Africa Centre of Excellence.						
PROCUREMENT	Consultancies; travels, tickets						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 6 months	Commencement: 1 st January 2020			Completion: 31 st March 2020			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; University of Nigeria, NUC, WB				PARTICIPANTS: ACE-SPED staff; UNN; NUC; WB; Partners			
ASSUMPTIONS	Partners, NUC, UNN supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Preparation of building plan						100,000
2	Award of contract						320,000
3							
4							
5.							
TOTALS							420,000

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarter 1 of Year 2 (January – March 2020)

Activity: DLI 4.3: Infrastructure Improvement for Research and Learning (Civil Works)

Sub-Activity/Task: Civil Works; Foundation Constructed for ACESPED Building complex

ACTIVITY	Preparation of Building plans and award of contract for service core building complex						
OUTPUT	Foundation Completed						
OUTPUT INDICATOR: Building completed and awarded					SOURCE OF VERIFICATION Building Foundation Completed and verified		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Building foundation completed Justification: Contract for building of ACE-SPED service core building complex will create visibility, a sense of worth and enhanced productivity as Africa Centre of Excellence.						
PROCUREMENT	Consultancies; travels, tickets						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 6 months	Commencement: 1 st January 2020			Completion: 31 st March 2020			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; University of Nigeria, NUC, WB				PARTICIPANTS: ACE-SPED staff; UNN; NUC; WB; Partners			
ASSUMPTIONS	Partners, NUC, UNN supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Foundation Procured						550,000
2							
3							
4							
5.							
TOTALS							550,000.00

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarter 1 of Year 2 (January – March 2020)

Activity: DLI 4.3: Infrastructure Improvement for Research and Learning (Civil Works)

Sub-Activity/Task: ACE-SPED Service Core building complex completed and functional

ACTIVITY	Preparation of Building plans and award of contract for service core building complex						
OUTPUT	ACESPED Service Core Building completed						
OUTPUT INDICATOR: Building completed and awarded					SOURCE OF VERIFICATION Building completed and functional		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Building completed Justification: Contract for building of ACE-SPED service core building complex will create visibility, a sense of worth and enhanced productivity as Africa Centre of Excellence.						
PROCUREMENT	Consultancies; travels, tickets						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 6 months		Commencement: 1 st January 2020			Completion: 31 st March 2020		
PRIMARY CONSTITUENTS: ACE-SPED, Partners; University of Nigeria, NUC, WB				PARTICIPANTS: ACE-SPED staff; UNN; NUC; WB; Partners			
ASSUMPTIONS	Partners, NUC, UNN supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Completion of building						450,000
2							
3							
4							
5.							
TOTALS							450,000

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarters 1, 2, 3, 4 & 5 of Year 1 (November –December each year)

Activity: DLI 6 & 7: Fiduciary Enhancement; Institutional Impact

Sub-Activity/Task: Scheduled ACE Meetings (Int’l advisory board, Ind. advisory board, etc)

ACTIVITY	Scheduled ACE Meetings (Int’l advisory board, Ind. Mgt. Cmtee, Res. & Academic						
OUTPUT	Minutes of meetings; outline of decisions, role-playing and implementation schedule						
OUTPUT INDICATOR: Minutes of meetings					SOURCE OF VERIFICATION Copies of minutes of meetings		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Valuable and robust contributions, assigned roles; everyone carried along Implementation schedules <p>Justification: Meetings necessary to maintain proper trajectory in the execution of the programs of the Centre.</p>						
PROCUREMENT	Travels; Tickets referenced						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 12 months	Commencement: 1 st November			Completion: 31 st December			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; Int’l advisory board, NUC, WB				PARTICIPANTS: ACE-SPED staff; UNN; NUC; WB; Int’l advisory board; Industrial Advisory board			
ASSUMPTIONS	Partners, Internal Advisory Boards, Industrial Advisory Boards; NUC, UNN, WB are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity And Partners contributions						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Scheduled ACE meetings	5,000	5,000	5,000	5,000		20,000
2							
3							
4							
5.							
TOTALS		5,000	5,000	5,000	5,000		20,000

Target DLI. Strengthening Capacity to Provide Relevant and Quality Services for Sustainable Power & Energy Development

Timeframe: Quarter 4 of Year 2 (October, 2020)

Activity: DLI 4.3: Infrastructure Improvement for Research and Learning (Civil Works)

Sub-Activity/Task: Renovation of international scholars' hostels with appropriate furnishings, fittings and back-up power

ACTIVITY	Renovation of international Scholars' hostels with appropriate furnishings, fittings and back-up power						
OUTPUT	International scholars' hostels renovated and furnished with back-up power supply						
OUTPUT INDICATOR: Renovated international scholars' hostels, furnished with back-up power	SOURCE OF VERIFICATION Renovated and furnished international scholars' hostels with back-up power						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Renovated international scholars' hostels; Furnishings with internet access Back-up power <p>Justification: A conducive living environment will reduce stress, promote quality health and enhance academic performance</p>						
PROCUREMENT	Furnishings, Consultancies, equipment, back-up power supply						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 4 months	Commencement: 1 st October 2020		Completion: 31 st October 2020				
PRIMARY CONSTITUENTS: ACE, Partners; University of Nigeria, NUC, WB; ACE Students	PARTICIPANTS: ACE-SPED staff; Consultants, UNN; NUC; WB						
ASSUMPTIONS	Partners, NUC, UNN, are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partner budgets for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Renovation of international Scholars' hostels, furnishings, back-up power	105,000					105,000
2							
3							
4							
5.							
TOTALS							105,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development

Timeframe: Quarter 1 of Year 1, 2, 3, 4 and 5 (February - March each year 2019-2023)

Activity: DLI 3 & 4: Quantity of Students and Quality of Education

Sub-Activity/Task: Development and Production of MEng/MSc and PhD curricula and Students' handbook

ACTIVITY	Development and production of MEng/MSc and PhD curricula and Students' handbook						
OUTPUT	MEng/MSc, PhD curricula developed and produced						
OUTPUT INDICATOR: ACE-SPED MEng/MSc and PhD curricula developed					SOURCE OF VERIFICATION Copies of developed MEng/MSc and PhD curricula produced		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> MEng/MSc curricula developed & produced PhD curricula developed & produced Justification: The academic curricula are to be developed to enable enrollment of students into the M.Eng and PhD programs each year						
PROCUREMENT	Consultancies, Travels, Tickets referenced						
RESPONSIBILITY FOR IMPLEMENTATION	CL/APC						
DURATION: 2 months	Commencement: 1 st February			Completion: 31 st March			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; University of Nigeria, NUC, WB, ACE students				PARTICIPANTS: ACE-SPED staff; UNN; NUC; WB; Consultants			
ASSUMPTIONS	Partners, NUC, UNN and Consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Development and production of M.Eng/MSc and PhD curricula and Students' handbook	10,000					10,000
2							
3							
4							
5.							
TOTALS		10,000					10,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarter 1 of Year 2 (March 2020)
Activity: DLI 4: Quality of Education
Sub-Activity/Task: Workshop with ACE-SPED partners on Curricula

ACTIVITY	Workshop with ACE-SPED partners on curricula review						
OUTPUT	Valuable inputs on curricula from partners and student-focused and globally oriented curricula reviewed						
OUTPUT INDICATOR: Student-focused and globally oriented and acceptable curricula produced.	SOURCE OF VERIFICATION Final copies of reviewed and revised MEng/MSc and PhD curricula produced						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> MEng/MSc curricula reviewed and revised & final copy produced Final copy of reviewed PhD curricula produced International best practices captured Justification: This will ensure that training offered by the ACE-SPED is relevant to the stakeholders and addresses identified regional developmental challenges in the sector.						
PROCUREMENT	Consultancies, Travels, Tickets referenced						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 1 month	Commencement: 1 st March 2020			Completion: 31 st March 2020			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; University of Nigeria, NUC, WB, ACE students	PARTICIPANTS: ACE-SPED staff; UNN; NUC; WB; International advisory board, Industry partners						
ASSUMPTIONS	International Advisory board, Industry Partners, NUC, UNN and Consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Workshop with partners on curricula review.	40,000						40,000
2							
3							
4							
5.							
TOTALS	40,000						40,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development

Timeframe: Quarter 1 of Year 1(January 2020 -March 2020)

Activity: DLI 3 & 4: Quantity of Students & Quality of Education

Sub-Activity/Task: Securing Approval of MEng/MSc and PhD programs from Post graduate school and University Senate

ACTIVITY	Securing Approval of MEng/MSc and PhD programs from PG School and University Senate						
OUTPUT	MEng/MSc, PhD curricula approved						
OUTPUT INDICATOR: Reviewed and final version of ACE-SPED MEng/MSc and PhD curricula approved by the senate of the University					SOURCE OF VERIFICATION Copies of the approved MEng/MSc and PhD curricula		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> MEng/MSc curricula reviewed & approved PhD curricula reviewed & approved Justification: This will enable smooth take off of the programs with due approval.						
PROCUREMENT	Consultancies, Travels, Tickets referenced						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 2 months	Commencement: 1 st January 2020			Completion: 31 st March, 2020			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; University of Nigeria, NUC, ACE-SPED students				PARTICIPANTS: ACE-SPED staff; Partners School of post graduate studies; UNN Senate			
ASSUMPTIONS	Partners, NUC, UNN senate and Post graduate school and are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Securing approval of M.Eng/MSc and PhD curricula from UNN senate	2,000					2,000
2							
3							
4							
5.							
TOTALS		2,000					2,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarters 1& 2 of Year 1, 2, 3, 4 and 5 (1st April – 31st May and 1st Sept. -31st Oct. 2019)
Activity: DLI 3: Quantity of Students
Sub-Activity/Task: Advertisement for intake of Students

ACTIVITY	Advertisement for intake of students into the ACE-SPED program						
OUTPUT	ACE-SPED MEng/MSc and PhD programs advertised on-line and across relevant embassies						
OUTPUT INDICATOR: ACE-SPED M.Eng/MSc and PhD program advertised					SOURCE OF VERIFICATION Copies of the advertised M.Eng/MSc and PhD program available		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> ACE-SPED M.Eng/MSc programs advertised on-line and across relevant embassies ACE-SPED PhD program advertised for intake of students Justification: The essence of the adverts is to ensure wide publicity of the programs both regionally and beyond.						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	APC						
DURATION: 5 months	Commencement: 1 st April- 31 st May 2019			Completion: 1 st Sept. - 31 st Oct, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, ACE-SPED students, Post graduate School				PARTICIPANTS: ACE-SPED staff; Post graduate school			
ASSUMPTIONS	Relevant embassies are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr.	2 nd Qtr.	3 rd Qtr.	4 th Qtr.	5 th Qtr.	6 th Qtr.	Total
1	Advertisement for intake of students	2,000					2,000
2							
3							
4							
5.							
TOTALS		2,000					2,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarter 3 of Year 1, 2, 3, 4, 5 (June/July and Nov./Dec. 2019)
Activity: DLI 3: Quantity of Students
Sub-Activity/Task: Selection and Admission of MEng/MSc and PhD students

ACTIVITY	Selection of MEng/MSc and PhD students						
OUTPUT	MEng/MSc, PhD screened and successful students selected for admission						
OUTPUT INDICATOR: Successful ACE-SPED MEng/MSc and PhD students admitted	SOURCE OF VERIFICATION List of admitted students MEng/MSc and PhD students on display						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> • Successful MEng/MSc students admitted • Successful PhD students admitted Justification: Thorough screening and eventual merit-based admission of candidates are necessary to ensure that the very best candidates are admitted to the ACE-SPED						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	CL/APC						
DURATION: 3 months	Commencement: 1 st Jun/July 2019			Completion: Nov./Dec., 2019			
PRIMARY CONSTITUENTS: ACE-SPED, University of Nigeria, NUC, ACE students	PARTICIPANTS: ACE-SPED staff; UNN school of post graduate studies						
ASSUMPTIONS	ACE-SPED staff and UNN post graduate school are proactive and supportive.						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Selection and Admission of M.Eng/MSc and PhD students			2,000				2,000
2							
3							
4							
5.							
TOTALS			2,000				2,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarter 2 of Year 2(March -May 2020)
Activity: DLI 4: Quality of Education
Sub-Activity/Task: Upgrading facilities of the Seminar Room for visual learning, conferencing and webinars

ACTIVITY	Upgrading of seminar room for visual learning, conferencing and webinars						
OUTPUT	Seminar room upgraded for visual learning, conferencing and webinars						
OUTPUT INDICATOR: ACE-SPED upgraded seminar room					SOURCE OF VERIFICATION Upgraded seminar room		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Seminar room upgraded and furnished Conferencing and webinar facilities installed Justification: This will make feasible real time virtual learning through such avenues as web conferencing and webinars for remote learning.						
PROCUREMENT	Equipment, consultancies, Travels, Tickets referenced						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 3 months	Commencement: 1 st March 2020			Completion: 31 st May, 2020			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; University of Nigeria, NUC, WB, ACE students				PARTICIPANTS: ACE-SPED staff; UNN; NUC; WB; Consultants			
ASSUMPTIONS	NUC and Consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Upgrading of seminar room for visual learning, conferencing and webinars		100,000					100,000
2							
3							
4							
5.							
TOTALS		100,000					100,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development

Timeframe: Quarter 1 & 2 of Year 1(March 2020–May 2020)

Activity: DLI 4.3: Infrastructure improvement for research and Learning

Sub-Activity/Task: Renovation and upgrading of 5 no. classrooms and provision of teaching aids and power back-up

ACTIVITY	Renovation and upgrading of 5 no. classrooms and provision of teaching aids and back-up power						
OUTPUT	5 No. classrooms upgraded and renovated and equipped with teaching aids and back-up power						
OUTPUT INDICATOR: Renovated 5 no classrooms equipped with teaching aids and back-up power	SOURCE OF VERIFICATION Upgraded and Renovated 5 No. classrooms						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> 5 No. classrooms renovated and equipped with teaching aids and back-up power Justification: This will ensure conducive environment for effective teaching and learning						
PROCUREMENT	Equipment, consultancies, Travels, Tickets referenced						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 3 months	Commencement: 1 st March 2020			Completion: 31 st May, 2020			
PRIMARY CONSTITUENTS: ACE-SPED, HODs of the five departments involved NUC, WB, ACE students	PARTICIPANTS: ACE-SPED staff; UNN works unit; HODs of Departments concerned; Consultants						
ASSUMPTIONS	UNN works unit, HODs and Consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	120,000						120,000
2							
3							
4							
5.							
TOTALS	120,000						120,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarter 2 of Year 2 (1st June - 30th June 2020)
Activity: DLI 4: Quality of Education
Sub-Activity/Task: Training of Faculty on the use of multimedia teaching aids

ACTIVITY	Training of faculty on the use of multimedia teaching aids						
OUTPUT	Faculty members trained on the use of multimedia teaching aids						
OUTPUT INDICATOR: ACE-SPED faculty proficient in the use of multimedia teaching aids	SOURCE OF VERIFICATION Faculty members proficient in the use of multimedia teaching aids						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> ACE-SPED faculty members proficient in the use of interactive multimedia teaching aids Justification: Faculty are trained on the use of the procured multimedia teaching aids to ensure optimal uses.						
PROCUREMENT	Consultancies, Travels, Tickets referenced						
RESPONSIBILITY FOR IMPLEMENTATION	CL/APC						
DURATION: 1 month	Commencement: 1 st June 2020			Completion: 30 th June, 2020			
PRIMARY CONSTITUENTS: ACE-SPED staff Partners; University of Nigeria, NUC, WB	PARTICIPANTS: ACE-SPED staff; UNN; NUC;WB, Consultants						
ASSUMPTIONS	Partners, NUC, UNN and Consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Training of faculty on the use of multimedia		17,000					17,000
2							
3							
4							
5.							
TOTALS		17,000					17,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarter 3 & 4 of Year 1, 2, 3, 4, 5 (July 2019 -December 2019)
Activity: DLI 4: Quality of Education
Sub-Activity/Task: Faculty and Students Support

ACTIVITY	Faculty and Students Support						
OUTPUT	Faculty and Students are supported in conference/workshop/seminar attendance						
OUTPUT INDICATOR: Capacity of faculty and students enhanced					SOURCE OF VERIFICATION Faculty better equipped for quality service delivery		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Faculty members well equipped for effective service delivery Students exposed to fit into modern workforce <p>Justification: This will help improve and sustain staff and students' competences towards excellence in education and research.</p>						
PROCUREMENT	Consultancies, Travels, Tickets referenced						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 6 months	Commencement: 1 st July			Completion: 31 st December			
PRIMARY CONSTITUENTS: Faculty, Partners; University of Nigeria, NUC, WB, ACE students				PARTICIPANTS: ACE-SPED staff; UNN; NUC; WB; Consultants			
ASSUMPTIONS	Partners, NUC, UNN and Consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partner budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Faculty and Students' support to conferences/workshops			90,000				90,000
2							
3							
4							
5.							
TOTALS			90,000				90,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarters 3 & 4 of Year 1, 2, 3, 4, 5 (July -December 2019)
Activity: DLI 3 & 4: Quantity of Students and Quality of Education
Sub-Activity/Task: Provision of Scholarships for MSc and PhD Students including research Costs to regional students

ACTIVITY	Provision of Scholarships for MEng/MSc and PhD students and research grants to regional students on competitive basis						
OUTPUT	Fellowships and research grants provided to MEng/MSc/PhD on competitive basis						
OUTPUT INDICATOR: Fellowships and research grants provided to ACE-SPED students	SOURCE OF VERIFICATION Evidence of fellowships and grants available						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Scholarships provided to MEng/MSc students Research grants provided for regional students Justification: This is a source of encouragement to regional students to encourage the enrollment of highly qualified and motivated students.						
PROCUREMENT	Consultancies, Travels, Tickets referenced						
RESPONSIBILITY FOR IMPLEMENTATION	CL/APC						
DURATION: 6 months	Commencement: 1 st July			Completion: 31 st December			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; NUC, WB, ACE students	PARTICIPANTS: ACE-SPED staff; UNN; NUC, Partners						
ASSUMPTIONS	Partners, NUC, UNN are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Provision of scholarships and research costs M.Eng/MSc/PhD			56,000				56,000
2							
3							
4							
5.							
TOTALS			56,000				56,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarter 3-4 of Year 2, 3, 4, 5 (July 2019 -November 2019)
Activity: DLI 3: Quantity of Short-Course Students
Sub-Activity/Task: Organization of Short Courses and Workshops to Address Specific Skill needs of Industry

ACTIVITY	Organization of Short Courses and Workshops for Specific needs of Industry						
OUTPUT	Identified specific skill needs of Industry addressed						
OUTPUT INDICATOR: Bridging of some of the skill gaps in the industry achieved	SOURCE OF VERIFICATION Specific industry skill needs in Energy & Power addressed						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Industry specific skill needs addressed Some identified skill gaps in Energy & Power closed Justification: The short courses will address skill gaps in industry to enhance productivity						
PROCUREMENT	Consultancies, Travels, Tickets referenced						
RESPONSIBILITY FOR IMPLEMENTATION	CL/APC						
DURATION: 5 months	Commencement: 1 st July 2019			Completion: 30 th November, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Industries, Partners, ACE students	PARTICIPANTS: ACE-SPED staff; NUC; WB; Partners Consultants						
ASSUMPTIONS	Partners, NUC, Industries, Consultants are Proactive and supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partner budgets for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Organization of short courses and workshops to address specific skill needs in industry		60,000				60,000
2							
3							
4							
5.							
TOTALS			60,000				10,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development

Timeframe: Quarter 4 of Year 1, 2, 3, 4, 5 (August 2019 -December 2019)

Activity: DLI 4: Quality of Education

Sub-Activity/Task: Language course for non-English Speaking students

ACTIVITY	Language course for non-English Speaking students						
OUTPUT	Non-English speaking students make progress in spoken and written English language						
OUTPUT INDICATOR: Non-English Speaking students make progress and are able to communicate in both written and oral English.					SOURCE OF VERIFICATION Non English Speaking Students Communicate effectively in English		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> English language courses mounted for non-English speaking students Students make progress in both written and oral English language Students are able to interact with fellow students and the community in the market Justification: This is to ensure that Non English speaking students are taught English.						
PROCUREMENT	Consultancies, Travels, Tickets referenced						
RESPONSIBILITY FOR IMPLEMENTATION	DCL/APC						
DURATION: 5 months	Commencement: August 2019			Completion: 31 st December, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Consultants, ACE Non English Speaking students				PARTICIPANTS: ACE-SPED staff; Non-English Speaking Students; Consultants			
ASSUMPTIONS	Consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Language Course for Non-English Speaking students			12,000			12,000
2							
3							
4							
5.							
TOTALS							12,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarter 4 of Year 2, 3, 4, 5 (December 2019)
Activity: DLI 3 & 4: Quantity of Students and Quality of Education
Sub-Activity/Task: Development of Educational Materials for Outreach Programs

ACTIVITY	Development of Educational Materials for Outreach Programs						
OUTPUT	Educational materials for outreach programs developed						
OUTPUT INDICATOR: ACE-SPED customized educational materials for outreach programs					SOURCE OF VERIFICATION Copies of educational materials available		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Customized educational materials for outreach programs in Sustainable Power and Energy produced Justification: The instructional materials to be developed shall serve as easy guide for instructors during the outreach programs.						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	APC						
DURATION: 5 months	Commencement: 1 st December, 2019			Completion: 31 st December, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Industries, Partners; University of Nigeria, NUC, WB				PARTICIPANTS: ACE-SPED staff; UNN; Industries, partners			
ASSUMPTIONS	Partners, UNN and Industries are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Development of educational materials for outreach programs			3,800			3,800
2							
3							
4							
5.							
TOTALS				3,800			3800

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarter 4 of Year 2, 3, 4, 5 (August 2019 -December 2019)
Activity: DLI 3 & 4: Quantity of Students and Quality of Education
Sub-Activity/Task: Vocational Outreach educational programs for Secondary School Students

ACTIVITY	Vocational outreach educational Programs for secondary school students						
OUTPUT	Vocational outreach educational programs developed						
OUTPUT INDICATOR: ACE-SPED customized vocational outreach programs for secondary schools launched.	SOURCE OF VERIFICATION Copies and launch of outreach programs						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Launch of vocational outreach programs in sustainable Power and Energy for secondary schools Justification: The essence of the program is to stimulate the desire for STEM in the young stars						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	APC						
DURATION: 5 months	Commencement: August 2019			Completion: 31 st December, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Secondary schools, Partners; University of Nigeria,	PARTICIPANTS: ACE-SPED staff; UNN; Secondary schools, industries						
ASSUMPTIONS	Secondary schools, Partners; UNN and Industries are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Development of vocational outreach programs for secondary schools				1,200			1,200
2							
3							
4							
5.							
TOTALS				1,200			1,200

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarter 2 of Year 1(April 2019 -December 2019)
Activity: DLI 4: Quality of Education
Sub-Activity/Task: Subscription to relevant international journals and databases (Research4Life)

ACTIVITY	Subscription to relevant international journals and databases						
OUTPUT	Relevant international journals and academic bases subscribed						
OUTPUT INDICATOR: Subscriptions to relevant international journals and data academic bases secured	SOURCE OF VERIFICATION Evidence of confirmation of subscription						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Identified international journals and data bases subscribed to Journals and data bases accessed by staff and students Justification: To ensure unrestricted access to top international journals and academic databases for faculty and students of the ACE-SPED						
PROCUREMENT	Licenses obtained and referenced						
RESPONSIBILITY FOR IMPLEMENTATION	ARC						
DURATION: 9 months	Commencement: April, 2019			Completion: 31 st December, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; University of Nigeria, NUC, WB	PARTICIPANTS: ACE-SPED staff; UNN; partners, NUC						
ASSUMPTIONS	Partners, NUC are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Subscription to international journals and data bases	14,000					14,000
2							
3							
4							
5.							
TOTALS		14,000					14,000

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarter 2 of Year 2, 3, 4, 5 (July 2020 -December 2020)
Activity: DLI 4: Quality of Education
Sub-Activity/Task: On-site workshops and short trainings at ACE-SPED Partner sites

ACTIVITY	On-site workshops and trainings on Sustainable Power and Energy at Partner sites						
OUTPUT	Partner staff skills in the area of sustainable Power and Energy Enhanced						
OUTPUT INDICATOR: Partner staff skills improved				SOURCE OF VERIFICATION Evidence of increased productivity, improvement in energy and cost savings			
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Partner staff skills improved; Energy and cost savings achieved Environmental integrity enhanced Justification: The on-site workshops and trainings shall provide avenue for exposure of participants to new challenges and breakthroughs in industry						
PROCUREMENT	Consultancies, hardware, software						
RESPONSIBILITY FOR IMPLEMENTATION	APC/ILO						
DURATION: 5 months	Commencement: July, 2020			Completion: 31 st November, 2020			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; UNN, Industries, NUC, WB			PARTICIPANTS: ACE-SPED staff; UNN; partners, Industries				
ASSUMPTIONS	Partners, Industries are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	On-site workshops and short trainings at ACE-SPED partner sites	10,400					10,400
2							
3							
4							
5.							
TOTALS		10,400					10,400

Target DLI. Strengthening Capacity to provide Student-Centred, Interactive, Engaging and Functional Educational Services for Sustainable Power & Energy Development
Timeframe: Quarter 2 of Year 2, 3 (July 2020 -December 2021)
Activity: DLI 4: Quality of Education and Research
Sub-Activity/Task: Pursuit of International accreditation of MEng/MSc and PhD programs (e.g. HCRES)

ACTIVITY	Pursuit of international accreditation of M.Eng/MSc and PhD programs						
OUTPUT	International accreditation of programs realized						
OUTPUT INDICATOR: International accreditation achieved						SOURCE OF VERIFICATION Evidence of accreditation certificate	
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> • International accreditation bodies identified • Application for accreditation initiated • Accreditation of programs realized Justification: This will ensure standardization and international recognition of the programs.						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 6 months	Commencement: July, 2020			Completion: 31 st December, 2021			
PRIMARY CONSTITUENTS: ACE-SPED, Partners; University of Nigeria, NUC, WB				PARTICIPANTS: ACE-SPED staff; UNN; academic partners, NUC			
ASSUMPTIONS	Partners, NUC are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Pursuit of international accreditation by HCRES		450,000					450,000
2							
3							
4							
5.							
TOTALS							450,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development
Timeframe: Quarter 1 of Year 1(April 2019-November, 2019)
Activity: DLI 4: Quality of Education and Research
Sub-Activity/Task: Gaps analysis survey to ascertain the research needs of the sector

ACTIVITY	Gaps Analysis survey						
OUTPUT	Identification of the research gaps in the Power and Energy Sector						
OUTPUT INDICATOR: Research needs identified and quantified					SOURCE OF VERIFICATION Codified research needs of the sector		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> • Research needs of the Power and Energy sector identified • Research gaps are codified • ACE-SPED staff and students engage in research in the areas of need Justification: This is necessary in order to become acquainted with the research needs of the sector						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	ILO						
DURATION: 1 month	Commencement: April, 2019			Completion: 30 November, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, NUC, WB				PARTICIPANTS: ACE-SPED staff; partners, Consultants			
ASSUMPTIONS	Partners, NUC are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Gaps analysis survey	20,000					20,000
2							
3							
4							
5.							
TOTALS		20,000					20,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development
Timeframe: Quarter 1 of Year 2, 3, 4, 5 (March 2019-August 2019)
Activity: DLI 4: Quality of Education and Research
Sub-Activity/Task: Fabrication of relevant R& D equipment

ACTIVITY	Fabrication of some R& D equipment						
OUTPUT	Relevant R&D equipment fabricated						
OUTPUT INDICATOR: R&D equipment fabricated and ready for deployment					SOURCE OF VERIFICATION Physical identification of fabricated equipment		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> R&D equipment fabricated and put into use Justification: Fabrication of relevant state-of the art research equipment is imperative to realize desired output						
PROCUREMENT	Hardware, software, consultancy, travels, tickets						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 6 months	Commencement: March, 2019			Completion: 30 August, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, NUC, WB				PARTICIPANTS: ACE-SPED staff; partners, Consultants			
ASSUMPTIONS	Partners, WB, NUC are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Fabrication of R&D equipment	60,000					60,000
2							
3							
4							
5.							
TOTALS		60,000					60,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development
Timeframe: Quarter 2 of Year 2(May, 2020)
Activity: DLI 4: Quality of Education and Research
Sub-Activity/Task: Capacity Building of core team Research Leads to head the thematic areas

ACTIVITY	Capacity Building Research Team leads						
OUTPUT	Research team leads sufficiently exposed to newer methods of cutting-edge research organization						
OUTPUT INDICATOR: Research team leads effective in directing research program	SOURCE OF VERIFICATION Enhanced competency of research team leads						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> • Competencies of research team leads are enhanced through workshops • Research output improved • Research results credible and relevant Justification: This will ensure maximum contribution of ACESPED as a regional core of excellence in sustainable power and energy development.						
PROCUREMENT	Consultancies						
RESPONSIBILITY FOR IMPLEMENTATION	ARC						
DURATION: 1 month	Commencement: May, 2020			Completion: 31 st May, 2020			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, NUC, WB	PARTICIPANTS: ACE-SPED staff; partners, Consultants						
ASSUMPTIONS	Partners, NUC are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Capacity Building of Ten (10) Research team leads	70,000					70,000
2							
3							
4							
5.							
TOTALS		70,000					70,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development
Timeframe: Quarter 2 of Year 2, 3 (June 2020)
Activity: DLI 4: Quality of Education and Research
Sub-Activity/Task: Training of faculty and technical staff on use of state-of-the-art equipment

ACTIVITY	Training of faculty and technical staff on the use of state-of-the-art equipment						
OUTPUT	Faculty and technical staff trained on the use of state-of-the-art equipment						
OUTPUT INDICATOR: Trained faculty and technical staff master the use of state-of-the-art equipment for effective teaching					SOURCE OF VERIFICATION Trained staff able to demonstrate competence in the use of equipment		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Faculty members possess in-depth skill in handling state of the art equipment Technical staff acquainted with machine workings for accurate demonstrations State-of-the-art facilities last long. Justification: This will facilitate efficient deployment of research equipment						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	DCL						
DURATION: 1 month	Commencement: June, 2020			Completion: 30 June, 2020			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, Manufacturer, NUC, WB, consultant				PARTICIPANTS: ACE-SPED staff; partners, Consultants, Manufacturer.			
ASSUMPTIONS	Partners, Manufacturer, consultant are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Training of faculty and technical staff on the use state-of-the-art equipment	10,000					10,000
2							
3							
4							
5.							
TOTALS		10,000					10,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development
Timeframe: Quarter 2 of Year 2, 3, 4, 5 (July 2020)
Activity: DLI 2: Development Impact
Sub-Activity/Task: Training of Safety and Security Personnel

ACTIVITY	Training of Safety and Security Personnel						
OUTPUT	Safety and Security Personnel trained in modern safety and security procedures and reporting						
OUTPUT INDICATOR: Safety and Security personnel acquire increased confidence in monitoring and conflict resolution in an academic environment				SOURCE OF VERIFICATION Trained staff able to demonstrate competence in safety handling and reporting procedures			
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Safety and security personnel acquire necessary exposure for efficient service delivery Justification: This will promote security of life and property and conducive work environment						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	ESSO						
DURATION: 1 month	Commencement: July, 2020			Completion: 31 July, 2020			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, NUC, WB, consultant			PARTICIPANTS: ACE-SPED staff; partners, Consultants,				
ASSUMPTIONS	Partners, consultant are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Training of safety and security personnel	4,000					4000
2							
3							
4							
5.							
TOTALS							4,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development

Timeframe: Quarter 2 of Year 2 (July 2020- October 2021)

Activity: DLI 4: Quality of Education and Research

Sub-Activity/Task: Provision of Equipment for ACESPED Design and Fabrication Workshop

ACTIVITY	Upgrading of Power and Energy Design Workshop						
OUTPUT	Power and Energy Design workshop upgraded with modern tools and equipment`						
OUTPUT INDICATOR: Research and Technical staff empowered to put learning to practice	SOURCE OF VERIFICATION Research output enhanced						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Faculty Research staff deploy acquire skill in handling state of the art equipment Research students exposed to new skills and competencies in design Justification: This is necessary to carry out research studies on Power and Energy						
PROCUREMENT	Hardware, Software, travels, ticket, equipment						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 2 months	Commencement: July, 2020			Completion: 31 October, 2021			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, Manufacturers, NUC, WB, consultants	PARTICIPANTS: ACE-SPED staff; partners, Consultants, Manufacturers.						
ASSUMPTIONS	Partners, Manufacturer, consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Provision of Equipment (Lathe, Folding, machine and complementary equipments for ACESPED Design Workshop	85,000					85,000
2							
3							
4							
5.							
TOTALS		85,000					85,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development
Timeframe: Quarter 2 of Year 2, 3 (July 2020- October 2021)
Activity: DLI 4: Quality of Education and Research
Sub-Activity/Task: Provision of Equipment for the Renewable Energy Laboratory

ACTIVITY	Provision of Equipment for the Renewable Energy Laboratory						
OUTPUT	Renewable Energy Laboratory provided with modern tools and equipment`						
OUTPUT INDICATOR: Research and Technical staff empowered to put learning to practice	SOURCE OF VERIFICATION Research output enhanced						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Faculty Research staff deploy acquire skill in handling state of the art equipment Research students exposed to new skills and competencies in design Justification: This is necessary to carry out research studies on Energy						
PROCUREMENT	Hardware, Software, travels, ticket, equipment						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 2 months	Commencement: July, 2020			Completion: 31 October, 2021			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, Manufacturers, NUC, WB, consultants	PARTICIPANTS: ACE-SPED staff; partners, Consultants, Manufacturers.						
ASSUMPTIONS	Partners, Manufacturer, consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Purchase and Installation of Laboratory Emissions Measuring System (LEMS)		65,000					65,000
2 Procurement and Installation of Differential Scanning Calorimeter or similar device							40,000
3 Procurement and Installation of solar simulator and kits							75,000
4 Procurement and Installation of other equipment							20,000
5. Training of staff							10,000
TOTALS							210,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development
Timeframe: Quarter 2 of Year 2, 3 (July 2020- October 2021)
Activity: DLI 4: Quality of Education and Research
Sub-Activity/Task: Upgrading of the High Voltage Laboratory

ACTIVITY	Upgrading of High Voltage Laboratory						
OUTPUT	High Voltage Laboratory upgraded with modern tools and equipment`						
OUTPUT INDICATOR: Research and Technical staff empowered to put learning to practice	SOURCE OF VERIFICATION Research output enhanced						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Faculty Research staff deploy acquire skill in handling state of the art equipment Research students exposed to new skills and competencies in design Justification: This is necessary to carry out research studies on Power						
PROCUREMENT	Hardware, Software, travels, ticket, equipment						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 2 months	Commencement: July, 2020			Completion: 31 October, 2021			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, Manufacturers, NUC, WB, consultants	PARTICIPANTS: ACE-SPED staff; partners, Consultants, Manufacturers.						
ASSUMPTIONS	Partners, Manufacturer, consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Purchase and Installation of Mixed Signal Oscilloscope with Accessories (see Annex 2)		90,000					90,000
2 Basic Power Plant Modules							15,000
3 Additional Power plant modules							35,000
4 Procurement and Installation of Solar Power Module							20,000
5. Training of staff							10,000
TOTALS							170,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development

Timeframe: Quarter 2 of Year 2, 3 (July 2020- October 2021)

Activity: DLI 4: Quality of Education and Research

Sub-Activity/Task: Provision of Equipment for the Advanced Materials Characterization Laboratory

ACTIVITY	Upgrading of Advanced Energy Materials Laboratory						
OUTPUT	Energy Materials Laboratory upgraded with modern tools and equipment`						
OUTPUT INDICATOR: Research and Technical staff empowered to put learning to practice	SOURCE OF VERIFICATION New equipment installed						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Faculty Research staff deploy acquire skill in handling state of the art equipment Research students exposed to new skills and competencies in design Justification: This is necessary to carry out research studies on Energy						
PROCUREMENT	Hardware, Software, travels, ticket, equipment						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 2 months	Commencement: July, 2020			Completion: 31 October, 2021			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, Manufacturers, NUC, WB, consultants	PARTICIPANTS: ACE-SPED staff; partners, Consultants, Manufacturers.						
ASSUMPTIONS	Partners, Manufacturer, consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Purchase and Installation of Model Angstrom Scanning Electron Microscope (SEM)		175,000				175,000
2	AA5000 Multi-function Scanning Probe Microscope Systems with accessories		70,000				70,000
3	Nano Indentation System with accessories		45,000				45,000
4	Procurement and Installation of Cutting, Mounting, and Polishing Machines						54,000
5.	Training of staff						16,000
TOTALS							360,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development

Timeframe: Quarter 2 of Year 1, 2, 3, 4, 5 (May 2019- December 2019)

Activity: DLI 4: Quality of Education and Research

Sub-Activity/Task: Development and review of research proposals in the thematic areas

ACTIVITY	Development and review of research proposals						
OUTPUT	Submitted research proposals reviewed						
OUTPUT INDICATOR: Research proposals that met criteria selected					SOURCE OF VERIFICATION Documentation of selected proposals		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Research proposals aligned to the vision and mission of ACE-SPED Research proposals address industry skills gap in power and energy Justification: This will involve ACESPED partners and senior academics to evaluate the proposals						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	ARC						
DURATION: 8 months	Commencement: May, 2019			Completion: 31 December, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, NUC, WB, consultants				PARTICIPANTS: ACE-SPED staff; partners, Consultants,			
ASSUMPTIONS	Partners, consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Call, development and review of research thematic areas	1,400					1,400
2							
3							
4							
5.							
TOTALS		1,400					1,400

ACESPED partners will be transported and accommodated during the period

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development

Timeframe: Quarter 2 of Year 2, 3, 4, 5 (June 2020-December, 2020)

Activity: DLI 4: Quality of Education and Research

Sub-Activity/Task: Software Purchase and Development

ACTIVITY	Software Development						
OUTPUT	Relevant software developed						
OUTPUT INDICATOR: Software developed					SOURCE OF VERIFICATION Demonstration of developed software		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Purchased and Developed software used in teaching and demonstration Students exposed to software technology development Justification: This will facilitate research and development in energy and power						
PROCUREMENT	Travels, Tickets, software						
RESPONSIBILITY FOR IMPLEMENTATION	ARC						
DURATION: 7 months		Commencement: June, 2020			Completion: 31 st December, 2020		
PRIMARY CONSTITUENTS: ACE-SPED, Partners, Manufacturers, NUC, WB, consultant				PARTICIPANTS: ACE-SPED staff; partners, Consultants, Manufacturers.			
ASSUMPTIONS	Partners, Manufacturers, consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Development of Software		2,000				2,000
2	Purchase of NLREG, MATLAB, PROTIUS and other Software		28,000				28,000
3	PYTHON, AutoCAD Inventor, etc		6,000				6,000
4.							
TOTALS							36,000

Item (1) involves development of non-commercial softwares by researchers in ACESPED to enhance teaching and learning. Experts are usually hired to encode the Algorithm.

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development

Timeframe: Quarter 2 of Year 1, 2, 3, 4, 5 (May, 2019-December 2019)

Activity: DLI 4: Quality of Education and Research

Sub-Activity/Task: Facilitate Exchange/ information sharing and Library resources b/w ACE-SPED and Partners

ACTIVITY	Facilitate Exchange and information sharing and library resources between ACE-SPED and Partners						
OUTPUT	Exchange of information enhanced						
OUTPUT INDICATOR: Exchange of information and library sharing between partners strengthened.	SOURCE OF VERIFICATION Improved information sharing						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Exchange of information and library sharing improves learning output Staff and Students benefit from industry experiences Justification: Exchange of information and library resources will enhance effective collaboration between ACE-SPED staff and partners						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	ILO						
DURATION: 8 months	Commencement: May, 2019			Completion: 31 December, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, UNN, NUC, WB,	PARTICIPANTS: ACE-SPED staff; partners, Consultants, UNN						
ASSUMPTIONS	Partners, , consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Facilitate exchange and sharing of information and library resources		4,000					4,000
2							
3							
4.							
TOTALS		4,000					4,000

This involves travels by ACESPED partners and staff; Courier delivery and telephone calls.

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development

Timeframe: Quarter 1 and 3 of Year 1, 2, 3, 4, 5 (February and September, 2019)

Activity: DLI 2: Development Impact

Sub-Activity/Task: Attendance to ACE-related meetings and events outside the University

ACTIVITY	Attendance to ACE-related meetings and events outside the University						
OUTPUT	Participation at official meetings for smooth implementation of ACE program						
OUTPUT INDICATOR: Program activities on track					SOURCE OF VERIFICATION Attendance and minutes of meetings		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Participation in meeting for target operations of ACE-SPED program Justification: This will promote synergy between ACE-SPED and stakeholders as well as ensure smooth running of the center						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 9 months	Commencement: February, 2019			Completion: 31 st September, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, NUC, UNN, WB, consultants				PARTICIPANTS: ACE-SPED staff; partners, Consultants, UNN			
ASSUMPTIONS	NUC, WB are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Attendance to Meetings and events outside the University	36,000		36,000			72,000
2							
3							
4							
5.							
TOTALS							72,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development
Timeframe: Quarter 4 of Year 1, 2, 3, 4, 5 (December 2019)
Activity: DLI 6: Timeliness and Quality of Fiduciary Management
Sub-Activity/Task: Annual Procurement, financial and external audit reports

ACTIVITY	Annual procurement, financial and external audit reports						
OUTPUT	Procurement, financial and external audit reports reconciled and readied						
OUTPUT INDICATOR: Procurement, financial and external audit reports ready for submission to appropriate authorities	SOURCE OF VERIFICATION Reports ready for inspection						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Procurement, financial and external audit reports ready on time for submission Justification: This will promote accountability and transparency						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 1 month	Commencement: December, 2019			Completion: 31 st December, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Partners , NUC, WB, UNN	PARTICIPANTS: ACE-SPED; UNN, partners,						
ASSUMPTIONS	Partners, NUC are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Annual procurement, financial and external audit reports				6,000			6,000
2							
3							
4							
5.							
TOTALS				6,000			6,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development

Timeframe: Quarter 2, 3, 4 of Year 1, 2, 3, 4, 5 (April, August, December 2019)

Activity: DLI 2: Development Impact

Sub-Activity/Task: Organize regular planning meetings with ACE-SPED partners and major stakeholders

ACTIVITY	Regular planning meetings with ACE-SPED partners and major stakeholders						
OUTPUT	Regular meetings held						
OUTPUT INDICATOR: Meetings held					SOURCE OF VERIFICATION Minutes of meetings		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> ACE-SPED programs advance and kept on track Justification: Need to prepare the project document, detailing all project activities, involvements , detailed allocation of duties, collaborative work schedules, detailed log framework and results framework for M&E.						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	DCL						
DURATION: 3 months	Commencement: April, 2019			Completion: December, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, NUC, WB, consultants				PARTICIPANTS: ACE-SPED staff; partners, Consultants, UNN, WB, NUC			
ASSUMPTIONS	NA						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Organize regular planning meetings with ACE-SPED partners and major stakeholders	1,500	1,500	2,000			5,000
2							
3							
4							
5.							
TOTALS		1,500	1,500	2,000			5,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development

Timeframe: Quarter 2, 3, 4 of Year 1, 2, 3, 4, 5 (April, August, December, 2019)

Activity: DLI 2: Development Impact

Sub-Activity/Task: Undertake industrial liaison visits

ACTIVITY	Undertake industrial liaison visits						
OUTPUT	Industrial liaison visits undertaken						
OUTPUT INDICATOR: Relevant information obtained, relationships strengthened.					SOURCE OF VERIFICATION Report of visits		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Relevant information on matters of mutual interests available, Relationships strengthened Justification: This will enhance links between ACE-SPED and industry partners						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	ILO						
DURATION: 3 months	Commencement: April, 2019			Completion: December, 2019			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, Manufacturer, NUC, WB, consultant				PARTICIPANTS: ACE-SPED staff; partners, Consultants, industries			
ASSUMPTIONS	Partners, industries, consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Undertake industrial liaison visits	2,000	2,000	2,000			6,000
2							
3							
4							
5.							
TOTALS		2,000	2,000	2,000			6,000

Target DLR. Action Plan for Disbursement Linked Indicator 4 (Expected output)

Timeframe: Year 1, 2019

Activity: DLI 6: Timeliness and Quality of Fiduciary Management

Sub-Activity/Task: Third Party procurement process verification

ACTIVITY	Third party procurement verification						
OUTPUT	Procurement verified						
OUTPUT INDICATOR: Verified procurement					SOURCE OF VERIFICATION Third party report		
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Third party assessment report 						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION:	Commencement:			Completion:			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, Manufacturer, NUC, WB, consultant				PARTICIPANTS: ACE-SPED staff; partners, Consultants, UNN			
ASSUMPTIONS	Partners, consultants, WB, NUC are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Third party procurement process verification						0.00
2							
3							
4							
5.							
TOTALS							0.00

Target DLR: Action Plan for Disbursement Linked Indicator 4 (Expected output)

Timeframe: Year 1, 2019

Activity: DLR: 6: Timeliness and Quality of Fiduciary Management

Sub-Activity/Task: Segmenting of UNN Bursary Accounting Software and Dedicated server, computer and networking accessories for ACE-SPED financial separate reporting

ACTIVITY	Segmenting of UNN Bursary Accounting software and dedicated server, computer and networking accessories for ACE-SPED financial separate reporting						
OUTPUT	UNN Bursary Accounting software segmented						
OUTPUT INDICATOR: Separate accounting and financial reporting for ACE-SPED created	SOURCE OF VERIFICATION Documentation of records and physical presence of unit						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> • Separate accounting and financial reporting instituted for ease of business • Transparency in financial reporting 						
PROCUREMENT	Hardware, software, travels, ticket, equipment						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION:	Commencement:	Completion:					
PRIMARY CONSTITUENTS: ACE-SPED, Partners, UNN, NUC, WB, consultant			PARTICIPANTS: ACE-SPED staff; UNN bursary, partners, Consultants,				
ASSUMPTIONS	UNN, consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and partner budgets for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Segmenting UNN bursary accounting software, computer, networking						15,475
2							
3							
4							
5.							
TOTALS							15,475

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development

Timeframe: Quarter 2 of Year 3 (April - June 2021)

Activity: DLI 4: Quality of Education and Research

Sub-Activity/Task: Upgrading of Laboratory on Industrial Electronics, Power Devices and New Energy Systems

ACTIVITY	Upgrading of Laboratory on Industrial Electronics, Power Devices and New Energy Systems with state-of-the-art equipment						
OUTPUT	Upgraded laboratory						
OUTPUT INDICATOR: Upgraded laboratory with modern equipment	SOURCE OF VERIFICATION Newly acquired equipment						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> New machines workings for accurate demonstrations State-of-the-art facilities last long. 						
PROCUREMENT	NA						
RESPONSIBILITY FOR IMPLEMENTATION	Prof. E. C. Ejiogu/CL						
DURATION: 1 month	Commencement: April, 2021			Completion: 30 June, 2021			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, Manufacturer, NUC, WB, consultant	PARTICIPANTS: ACE-SPED staff; partners, Consultants, Manufacturer.						
ASSUMPTIONS	Partners, Manufacturer, consultant are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1	Gaps analysis survey	10,000					10,000
2							
3							
4							
5.							
TOTALS							250,000

Target DLI. Strengthening Capacity to provide robust need-driven research with strong practice orientation for Sustainable Power & Energy Development

Timeframe: Quarter 2 of Year 2, 3 (July 2020- October 2021)

Activity: DLI 4: Quality of Education and Research

Sub-Activity/Task: Provision of Equipment for the Power Systems Laboratory

ACTIVITY	Provision of Equipment for the Power Systems Laboratory						
OUTPUT	Power Systems Laboratory provided with modern tools and equipment`						
OUTPUT INDICATOR: Research and Technical staff empowered to put learning to practice	SOURCE OF VERIFICATION New equipment installed						
IMPLEMENTATION MILESTONES	<ul style="list-style-type: none"> Faculty Research staff deploy acquire skill in handling state of the art equipment Research students exposed to new skills and competencies in design Justification: This is necessary to carry out research studies on Renewable Energy						
PROCUREMENT	Hardware, Software, travels, ticket, equipment						
RESPONSIBILITY FOR IMPLEMENTATION	CL						
DURATION: 2 months	Commencement: July, 2020			Completion: 31 October, 2021			
PRIMARY CONSTITUENTS: ACE-SPED, Partners, Manufacturers, NUC, WB, consultants	PARTICIPANTS: ACE-SPED staff; partners, Consultants, Manufacturers.						
ASSUMPTIONS	Partners, Manufacturer, consultants are supportive						
FINANCIAL IMPLICATIONS/BUDGET LINE	ACE-SPED and Partners budget for the activity						
Budget Line Analysis	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	5 th Qtr	6 th Qtr	Total
1 Purchase and Installation of POWER SYSTEM SIMULATOR H-180-CON		650,000					650,000
2							
3							
4 Procurement and Installation of other equipment		10,000					10,000
5. Training of staff		2,000					2,000
TOTALS							662,000

APPENDIX 1

ACE-SPED UNN POLICY ON STUDENT ABUSE/SEXUAL HARASSMENT

PREAMBLE

ACE-SPED intends to maintain the highest order of morality, decency and respect among staff and students. It is usually common for those in any position of authority to sexually or financially exploit persons within their sphere of influence. Hence, the essence of this document is to provide a holistic framework to prevent the incidence of student abuse/sexual harassment in ACE-SPED by articulating well-rounded mitigation measures as well as specifying commensurate sanctions for persons involved in such conduct. Students should be able to undertake their studies at ACE-SPED without any fears or apprehension of exploitation of any sort. In line with the core principles of service delivery in the University of Nigeria, Nsukka, ACE-SPED pursues courteous, respectful and dignifying staff – student, staff – staff and student – student relationship. Effective service delivery shall be promoted without prejudice to gender, race, ethnic leaning, religious affiliation and, of course, vested interest arising from or in a bid to initiate or sustain any form of illicit/abusive relationship. This document applies to all staff, students and partners of ACE-SPED undertaking any activity at, for or on behalf of ACE-SPED. This document ceases to be in force under the following circumstances:

- (i) when a staff is disengaged.
- (ii) When a student has graduated. However, if the student was a victim of abuse or sexual harassment by a staff member of ACE-SPED, the terms of this document shall apply to such staff.
- (iii) When ACE-SPED partners are not acting in co-ordination with, with respect to, for or on behalf of ACE-SPED
- (iv) When the abuse or sexual harassment is not related to ACE-SPED activities. However, ACE-SPED shall lend full and unalloyed co-operation to law enforcement agencies for the purpose of free and fair prosecution of staff accused of such crime.

CATEGORIES OF PERSONS TO WHOM THIS DOCUMENT APPLIES

- (i) ACE-SPED staff – an ACE-SPED staff is a person hired directly by ACE-SPED either on a long-term or short-term basis to perform specific tasks for and on behalf of ACE-SPED. This included: principal officers, academic staff, post-doctoral fellows and other support staff. Such persons will usually be provided with letter of appointment specifying terms and conditions of the job.

- (ii) ACE-SPED students – an ACE-SPED student is a person who, at one time or the other, applied and was offered admission to undertake any of the following programmes at ACE-SPED.
 - a. Master's
 - b. Ph.D
 - c. Bench work
 - d. Short course
 - e. Skill acquisition

Persons in this category would normally be issued with a sort of admission letter prior to their commencement of their programmes at ACE-SPED.

- (iii) ACE-SPED Partners – this includes persons delegated by ACE-SPED industry partners to undertake any activity related to ACE-SPED.

ACTIONS CONSTITUTING STUDENT ABUSE/SEXUAL HARASSMENT

At ACE-SPED, sexual harassment is viewed as any unwelcome sexual advances and request for sexual favours, either verbally, use of innuendoes, use of any electronic media or by a third party, in return for any form of assistance in matters relating to ACE-SPED or with threat of punishment in matters relating to ACE-SPED if such advances are rebuffed. Student abuse is viewed as any form of exploitative relationship with a student based on intimidation, against the wish of such student. Hence, at ACE-SPED, the following actions shall constitute student abuse/sexual harassment and shall be dealt the strongest level of disapproval and sanctions as prescribed in this document.

- i. Attempt to have sexual relationship with a student in return for marks
- ii. Sexual advances towards a student with promise to protect the interests of such student in ACE-SPED related matters
- iii. Sexual advances towards a student with threat of punishment if declined
- iv. Use of sexually abusive language on a student
- v. Deliberate and repeated glances at the sensitive body parts of a student with intent to seduce
- vi. Request for nude or indecent pictures of a student
- vii. Sending of suggestive messages using SMS, emails, WhatsApp or any other form of electronic media

- viii. Deliberate physical contact with or touching of a student with the intent to humiliate or extract sexual pleasure.
- ix. Rape
- x. Unguarded remark about the body of a student
- xi. Frustrating a student with the intent to make him/her sexually vulnerable
- xii. Antagonism against a student for refusing sexual advances.
- xiii. Systematic distribution of a student's indecent picture or video
- xiv. Any other action that is generally accepted as abuse/sexual harassment

MODALITIES FOR REPORTING CASES OF ABUSE/SEXUAL HARASSMENT

Every case of abuse must be reported immediately, preferably within one week, to the Management Board of ACE-SPED in writing, through the Officer in charge of Sexual harassment. Full, accurate and unexaggerated details of the incidence must be provided in the complaint letter with supporting evidence, if any. Anonymous complaints are highly discouraged since it will be difficult to conduct an objective investigation into such allegations. ACE-SPED frowns at any attempt by anyone to entrap, blackmail or falsely accuse an ACE-SPED staff, students or partners to gain undue advantage. An accused staff member who belongs to the Management Board shall recuse himself/herself from the investigation. Management Board members who are related to the accused staff shall not take part in the investigation and decisions arising therefrom. The Centre Leader shall acknowledge receipt of the complaint in writing within one week he/she is in receipt of such. If the aggrieved student does not receive such acknowledgement within the stipulated time, he/she should send a reminder. The Centre Leader shall convene a Management Board meeting to constitute a panel of enquiry within two weeks of receiving such complaint. The panel of enquiry shall submit their report within two months of its constitution. The panel of enquiry must provide a conducive atmosphere for both the accused and the aggrieved persons to present their sides of the story. Under no circumstance should the panel of enquiry intimidate an aggrieved person or a witness in an attempt to foster comradery. Final decision on the complaint shall be taken by the Management Board after studying the report submitted by the panel of enquiry.

SANCTIONS AGAINST VERIFIED CASES OF ABUSE/SEXUAL HARASSMENT

The cases previously listed are categorized as follows for the purposes of administering appropriate prohibitive/disciplinary measures.

Class A Offence

- i. Rape
- ii. Consensual sexual relationship with a student in return for favours in matters relating to ACE-SPED
- iii. Consensual sexual relationship with a student or junior staff built on intimidation and threat of punishment
- iv. Frustrating a student with the intent to make him/her sexually vulnerable
- v. Systematic distribution of a student's indecent picture or video

Class B Offence

- i. Attempt to have sexual relationship with a student in return for marks
- ii. Sexual advances towards a student with promise to protect the interests of such student in ACE-SPED related matters
- iii. Sexual advances towards a student with threat of punishment if declined
- iv. Use of sexually abusive language on a student
- v. Request for nude or indecent pictures of a student
- vi. Deliberate physical contact with or touching of a student with the intent to humiliate or extract sexual pleasure.

Class C Offence

- i. Deliberate and repeated glances at the sensitive body parts of a student with intent to seduce
- ii. Sending of suggestive messages using SMS, emails, WhatsApp or any other form of electronic media
- iii. Unguarded remark about the body of a student
- iv. Passive antagonism against a student for refusing sexual advances.

When a complaint has been investigated and verified to be true, the following sanctions shall be dispensed on the erring person.

Sanctions for Class A Offence

- (i) Staff of ACE-SPED found guilty of class A offence shall be suspended indefinitely with half salary, pending the determination of the case in proper

court of law with jurisdiction to hear the matter. It will be the duty of ACE-SPED Management Board to refer the case to the Police for prosecution. If the accused person is found guilty by the court, he/she shall be dismissed by ACE-SPED with immediate effect. If not found guilty, the staff shall be fully reinstated with all salary arrears paid in full.

- (ii) A student of ACE-SPED found guilty of Class A offence shall be dismissed from ACE-SPED.
- (iii) A staff of an ACE-SPED partner or persons acting on behalf of the partner in matters or activities relating to ACE-SPED found guilty of Class A offence shall be investigated by a panel of enquiry set up by ACE-SPED and the full report forwarded to the industry partner for appropriate sanctions.

Sanctions for Class B Offence

- (i) Staff of ACE-SPED found guilty of class B offence shall be suspended for three months with the full report of the investigation stored in file of the staff. Thereafter, he/she shall be reinstated with a stern letter of warning. A second offence shall result in the disengagement of the concerned staff. Such a staff will not at any future time be re-engaged by ACE-SPED whether on long-term, short-term, contract, adjunct or any other basis or guise.
- (ii) A masters or PhD student of ACE-SPED found guilty of Class B offence shall be suspended for one semester. This will invariably result in the elongation of graduation by one semester. A person on short course, bench work or skill acquisition programme at ACE-SPED found guilty of Class B offence shall be dismissed immediately from ACE-SPED
- (iii) A staff of an ACE-SPED partner or persons acting on behalf of the partner in matters or activities relating to ACE-SPED found guilty of Class B offence shall be investigated by a panel of enquiry set up by ACE-SPED and the full report forwarded to the industry partner for appropriate sanctions.

Sanctions for Class C Offence

- (i) Staff of ACE-SPED found guilty of class C offence shall be suspended for one month with the full report of the investigation stored in file of the staff. Thereafter, he/she shall be reinstated with a stern letter of warning. A second offence shall result in the disengagement of the concerned staff. Such a staff will not at any future time be re-engaged by ACE-SPED whether on long-term, short-term, contract, adjunct or any other basis or guise.

- (ii) A student of ACE-SPED found guilty of Class C offence shall be issued a stern warning letter. A repeat of such offence will result in dismissal.
- (iii) A staff of an ACE-SPED partner or persons acting on behalf of the partner in matters or activities relating to ACE-SPED found guilty of Class C offence shall be investigated by a panel of enquiry set up by ACE-SPED and the full report forwarded to the industry partner for appropriate sanctions.

A Case of False or Falsified Report

If a report is investigated and found to be false beyond every reasonable doubt, the complainant shall be meted with exact same sanctions specified for persons found guilty of abuse/sexual harassment according to the category of abuse/harassment reported.

APPENDIX 2

MONITORING AND EVALUATION

ACE-SPED recognizes the importance of monitoring this sexual harassment policy and will ensure that it anonymously collects statistics and data as to how it is used and whether or not it is effective.

Deputy Centre Leader will report on compliance with this policy, including the number of incidents, how they were dealt with, and any recommendations made. This will be done on a yearly basis. As a result of this report, the company will evaluate the effectiveness of this policy and make any changes needed.

Environment and Social safeguards

(Insert the Environmental and Social Management Plan and identify the responsible staff. Ensure that the policy is also disclosed on the Centre website.)

Identification of Activities Requiring Environmental Impact Assessment

The World Bank Environmental and Social Safeguards Guidelines and Operational Policies which enable the integration of environmental and social considerations into the development, planning and execution of development projects, is designed to: (i) protect the environment and society from the potential negative effects of projects, plans, programs and policies; (ii) reduce and manage the risks associated with implementation of project activities; and (iii) assist in better decision-making to ensure sustainability of activities.

The identification of activities that will require environmental impact assessment (EIA) at ACE-SPED strictly complied with the *Environmental and Social Management Framework (ESMF)* of the Africa Excellence Centres for Development Impact Project which was aimed at providing a general view of the environmental and social conditions under which the Project is to be implemented.

The ***main specific objectives*** of the ESMF are as follows:

- Integrate environmental and social issues into project planning.
- Present the legal framework of social and environmental management in Nigeria.
- Identify the main state and non-state institutions involved.
- Establish a framework to identify, analyse and evaluate the potential environmental and social
- impacts of the activities planned under the project.
- Define the methodology for subproject screening and required social and environmental
- safeguards.
- Identify the main risk mitigation measures.

- Clarify the roles and responsibilities of the stakeholders and define the monitoring and surveillance framework for implementation of the ESMF.
- Determine budget implications for environmental and social project management.

Though the ESMF envisaged that the likely impacts resulting from projects associated with centres of excellence will be limited both in time and space, it is pertinent to identify the projects that may require various levels of assessment with the core objective of consolidating and sustaining positive impacts on the one hand and mitigating negative ones on the other. All activities associated with centres of excellence converge to the specific and long-term objectives of fighting poverty, boosting shared prosperity and encouraging investment in knowledge and skills in all sub-sectors of education. *More specifically*, the Project will promote awareness among all national stakeholders about the environmental and social issues of Project activities and respect for the environment and the essential principles of sustainable development.

National Policy Framework

Environmental Impact Assessment is a tool for achieving sustainable development. In 1988, the Federal Government of Nigeria enacted the *National Policy on the Environment* (NPE) (revised in 1999) to achieve sustainable development in Nigeria, particularly in order to: secure a quality of environment adequate for good health and wellbeing; conserve and use the environment and natural resources for the benefit of present and future generations; restore, maintain and enhance the ecosystems and ecological processes essential for the functioning of the biosphere to preserve biological diversity and the principle of optimum sustainable yield in the use of living natural resources and ecosystems; and raise public awareness and promote understanding of the essential linkages between the environment, resources and development, and encourage individuals and communities participation in environmental improvement efforts. In further pursuant of sustainable development, the *Environmental Impact Assessment (EIA) Act* (No. 86 of 1992) was enacted to empower the Federal Ministry of Environment to request and facilitate EIAs any proposed physical work or activity that is likely to have significantly impacts on the environment.

Operational Policies

The ACE Impact project is classified as "category B", because its adverse effects on the population or areas of environmental importance are *limited, site-specific, and likely reversible*, and mitigation measures can be more *easily designed/implemented*. Hence, among all the World Bank environmental and social safeguard policies, *two Operational Policies (OPs) and Bank procedures (BPs) are important under the ACE-SPED Impact Project* to ensure that the impact of the construction on the stakeholders and the environment will be assessed to comply with international good practice. These policies are namely:

OP/BP 4.01 Environmental Assessment, which covers impacts on the environment, human health and safety, physical cultural resources, and global trans-boundary and environmental issues. OP 4.01 is triggered because the Project is likely to have environmental risks and impacts on its area of influence. This policy requires that environmental and social consequences be identified early in the project cycle and considered in the selection, location, planning, and design of the project to minimize, prevent, reduce, or compensate for adverse impacts and thereby maximize positive impacts and include processes for mitigation and management of environmental and social impacts during the project cycle.

OP/BP 4.11 Cultural Physical Resources, which provides cultural heritage guidelines to avoid or mitigate adverse impacts of development projects. This policy applies to the following projects: (i) any project involving major excavation, demolition, earthworks, flooding or other environmental modifications; (ii) any project located on or near a site recognized as cultural property; (iii) any project designed to support the management or conservation of physical cultural property. As part of the ACE Impact Project, this will also concern buildings of historical value and which would be the subject of rehabilitation works.

In addition, the Disclosure Policy OP/BP 4 which ensures the project is disclosed to stakeholders through National and local newspapers, notice boards, meetings, websites and signposts and their input sought for, will be observed.

Activities of ACE-SPED Requiring EIA

The Environmental and Social Management Framework of 2018 clearly specified that the main work that will likely be undertaken under the ACE Impact Project and that may have an environmental and social impact is as follows:

- Construction of new buildings or other facilities within the current boundaries of university campuses;
- Extension of current buildings and facilities;
- Rehabilitation of old buildings and facilities, including repair of recent buildings that do not meet current standards.

In strict compliance with the ESMF, all projects of ACE-SPED exclude any form of land or property acquisition or resettlement or physical displacement of populations (all work will be done in sites belonging to the universities). The level of EIA required will be determined by the sites chosen for the identified projects. Rehabilitation works already have pre-fixed sites and thus EIA will be based on the current site of the structure to be rehabilitated.

ACE-SPED activities that are likely to have social and environmental impacts and therefore will require EIA have been enumerated below.

Project Activity	Objective	Justification
Construction and equipping of ACE-SPED Service Core building complex within the current boundaries of University of Nigeria, Nsukka campus,	To create an identity rallying point for seminars, workshops, board room, ICT backbone and offices befitting a World Bank Assisted Centre of Excellence	Construction and equipping of ACE-SPED service core building complex will create visibility, a sense of worth and enhanced productivity as Africa Centre of Excellence.
Renovation of international scholars hostels with appropriate furnishings, fittings and back-up power	To provide a conducive living environment for international students	A conducive living environment will reduce stress, promote quality health and enhance academic performance
Rehabilitation of existing class rooms for kick off, awaiting the construction of the ACE-SPED Service Core Building	To provide a start off space for conducive learning prior to the building of the ACE-SPED Service Core Building Complex	Conducive learning environment
Mining of clay at Uzo-Uwani	To obtain raw materials for the mass production of insulators	National self-sufficiency in electricity
Setting up of insulator manufacturing plant	Commercialization and mass production of locally-made and affordable insulators	

Construction of the ACE-SPED Service Core building complex will involve the following activities:

- Pre-construction (planning/ design) phase
- Construction phase
- Operation and maintenance phase
- Decommissioning phase

Provided in the table below is a list of major risks associated with the enumerated phases of the service core complex. Some of the identified risks may also apply wholly or in part to the other projects listed above.

Risk associated with various project phases and mitigation measures

Project phase	Major risks	Mitigation measure
Pre-construction	<ul style="list-style-type: none"> • Neglect of the environmental and social aspects and their low consideration during the technical studies • preparation of unsatisfactory environmental studies, especially due to lack of public participation. • potential environmental and social concerns associated with site selection. 	<ul style="list-style-type: none"> • Public and stakeholder consultation during site selection and preparation and validation of studies. • Quality control and implementation of validation procedures for environmental studies and their dissemination. • Regular supervision of building sites by environmental experts
Construction	<ul style="list-style-type: none"> • Air, noise, soil and water pollution • Vegetation and soil degradation • Threats to hygiene, health and safety of workers, residents and users • Natural risks • Risks of conflicts between the workers and local populations 	<ul style="list-style-type: none"> • On-site containment and treatment of pollutants/effluent, safe disposal of waste generated on site following best practices, use of construction vehicles that comply with emission standards. • Removal of vegetation should be undertaken only when indispensable, on-site runoff control to mitigate the risks of erosion and flooding • Provision of adequate protective wears for workers, strict compliance with health and safety guidelines, use of well-trained personnel • Project site should be so selected as to reduce risks of flooding, erosion and landslide • Local population should be recruited into the construction workforce to avoid conflicts
Occupancy/maintenance	<ul style="list-style-type: none"> • Inadequate design • Lack of a system for the collection and transfer of waste, in particular solid waste • Possible lack of an effective, regulatory and adapted sanitation system • Lack of regular maintenance procedures • Insufficient enforcement of 	<ul style="list-style-type: none"> • All designs will be checked and approved before construction commences; projects should be utilized in strict compliance with design objectives • Where buildings are multi-storied, waste chutes will be installed; Buildings should be serviced by the University waste management unit; signs and posters should be used to engender

	<p>security measures</p> <ul style="list-style-type: none"> • Lack of appropriate measures for people with disabilities. 	<p>environmental awareness and sensitivity among staff and students.</p> <ul style="list-style-type: none"> • Routine maintenance of such components as fire extinguishers, air-conditioners, sewers, lawns, should be pre-scheduled; faults should be attended to immediately upon detection. • Dedicated security personnel from the University Security Unit should provide physical security for staff and students at ACE buildings, closed-circuit cameras (CCVTV) and anti-burglar alarms should be installed in all ACE buildings. • All ACE buildings should be designed easy access to persons with disabilities.
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- The effects of *climate change* will be taken into account in the choice of materials, the overall design of buildings and the technological options for construction (e.g., energy efficiency). The building will be in consonance with local climatic, environmental, and meteorological conditions and will incorporate proper ventilation and provision of sunshine, air movement, and maximum usage of daylight.
- *Location and design of new buildings* should also take into account site-specific risks (such as location near gullies which are prone to flooding and erosion; near water bodies and designated forests etc.).
- *Sourcing of construction materials* should be considered, especially given the risk of contractors using non-registered quarries, illegal sand-mining or creating new quarries through illegal extractions.
- The design of the buildings under ACE Impact will take into account *the gender dimension*, especially in relation to the provision of a sufficient number of separate men's and women's washrooms (with the installation of lavatories, washbasins and urinals, etc.).
- All facilities, whether to be built or rehabilitated, will be properly designed in strict compliance with national standards for the protection and promotion of *persons with disabilities*, by removing barriers for their inclusion and improving their accessibility to physical infrastructure.

ANNEX I: Check list. Environmental and social risks and mitigating measures

Types of risk Main	Assessment	Level of risk (*)	Main measures
Tendering process (pre-construction phase)	Neglecting environmental and social issues	Low to moderate	Preparation of appropriate Terms of Reference, which will be validated by NESREA and approved by the WB. All mitigation measures must be included into the contractor bid documents
Constructions	Risks related to large deep excavations; opening of trenches for laying extension and densification pipes.	Moderate	Selection of specialized companies Conduct of prior technical studies. Preparation of detailed technical specifications for contractors
Soils	Pollution risks or accidental soil erosion (at the site and neighborhood level)	Low	Conducting preliminary geotechnical studies. Anti-erosion measures
Waters	Potential groundwater pollution and groundwater contamination (accidental spills of hydrocarbons and lubricating oils)	Low to moderate	Use of small structures allowing the flow of rainwater Wastewater management: Sanitary sewage disposal (or sealed and fenced pit) Quality control of drinking water Implementation of appropriate erosion and sediment control measures, such as hay bales and / or silt barriers to prevent the movement of sediments from the site and the generation of excessive turbidity in the yards. water and nearby rivers.
Debris	Construction debris	Moderate	Correct management of debris, according to the standards established in the contractor's

			ESMP-W
Waste	Construction site waste (during construction) Domestic waste (during maintenance)	Low to moderate	<p>Adequate storage of products and waste (waterproof storage); Disposal of waste to authorized public landfills. Hygiene in construction sites Prohibition of waste in the open air Roadways and sites for waste collection and disposal will be identified for the main types of waste typically generated by demolition and construction activities. Mineral construction and demolition waste will be segregated from general waste, organic, liquid and chemical waste through on-site sorting and placed in appropriate containers. Construction waste will be collected and disposed of appropriately by licensed collectors Waste disposal records will be maintained as evidence for the appropriate management planned. Where appropriate, the contractor will reuse and recycle suitable and viable materials (with the exception of asbestos) All these provisions must be reported in the Contractor's ESMP-W</p>
GHG emissions Regular	Exhaust gas	Low to moderate	maintenance of construction machinery and vehicles
11. Vegetation	Some works involve the cutting or removal of vegetation (trees, shrubs) and the	Low	<p>Establishment of a green zone Search for alternative solutions (to avoid cutting trees) Tree planting to compensate for the possible destruction of green spaces and the shortfall in terms of CO2 sequestration</p>

	reduction or destruction of green spaces.		capacities
12. Air quality	Negative potential impact of heavy machinery on construction sites and	Moderate	Air pollution control system (compliance with standards for exhaust emissions from construction equipment (work phase). Watering of construction sites;

ANNEX 2: Equipment for High Voltage laboratory

S/No.	Items	Quantity	Unit price	Total price
1	Antenna system demonstrator	5	108,000	540,000
2	Am radio system demonstrator	5	152,000	760,000
3	Fm stereo radio system trainer	5	184,000	920,000
4	3 phase Earth leakage breaker	3	320,000	960,000
5	Moving coil DC voltmeter	10	18,000	180,000
6	Moving coil AC voltmeter	10	18,000	180,000
7	Moving coil AC ammeter	10	18,000	180,000
8	Moving coil DC ammeter	10	18,000	180,000
9	Battery analyzer by fluke BT510	3	1,606,800	4,820,400
10	Earth ground tester	3	863,500	2,590,500
11	Tektronix 4 series mixed signals oscilloscope mso 46	3	4,070,000	12,210,000
12	Digital laser tachometer TACH 20	3	216,300	648,900
13	10amps 500 ohms rheostat	8	230,000	1,840,000

Total 26,009,800

**5% Transportation,
Installation and
Commissioning**

1,300,490

5% VAT 1,300,490

GRAND TOTAL 28,610,780

