

## **PROPOSAL FOR**

### **ENVIRONMENTAL SAFEGUARDING WITH INSTALLATION OF THUNDER ARRESTORS ON A MAST**

#### **PROPOSAL FOR ENVIRONMENTAL SAFETY THROUGH INSTALLATION OF THUNDER ARRESTORS INTRODUCTION**

The Danish NGO Land of Hope ( formerly DINNødhjælp ) was founded in 2012 by Anja Ringgren Lovén. In 2015 she and her husband, David Emmanuel Umem, build the biggest Children Center in West Africa, situated in Akwa Ibom State, Nigeria. The center's accommodation is built and needs regular maintenance to keep about 74 children rescued from accusations, torture of being branded as witches and other forms of violence against children.

We provide education, health care, nutrition and psychosocial services to achieve rehabilitation, after rescue and eventual reintegration of children. Our children are given adequate care to the utmost standards possible. In rehabilitating children who have undergone traumatic experiences we use several techniques counselling, sports, arts and ICT. We have a staff capacity of over twenty five supporting the children and maintaining the environment. Our ad-hoc and volunteer staff are about thirty five that support various aspects of our work

This proposal centers round our maintenance and safety of the facility and overall security of lives and property. Power is a critical problem in Nigeria therefore the center was able to get donor support for solar panels to provide an assured source of power for at least six to eight hours a day.

We support about two hundred community based children and families by raising awareness on child's right and protection, our advocacy on children is very key as most rescued children had undergone severe abuses and suffer a lot of hardships before they were rescued.

#### **Why the Urgency for this Project?**

- Protection of lives and property of our children and staff especially as we approach thunder high frequency raining season starting from April in Nigeria.
- The need to ensure safety and protection of consistent source of power for stipulated number of hours that at our solar and power storage proposed capacity secured.
- Prevention of property and environmental damage from thunder strikes
- The mast also serves as potential internet facility booster when we get support for full coverage for internet on our facility especially our ICT center for the children.

## **Direct Beneficiaries**

1. Children and staff of Land of Hope
2. Land of Hope
3. Surroundings of the organisation

## **Statement of the Problem**

This project is been proposed on a tripod level, the center has access to solar panels that aids access to power for at least six to eight hours a day. The inverters and battery room are currently under threat due to our location in a thunderstorm zone, we experience thunder lightening sending shocks through the earth that destroy the inverters and other electronic appliances that are meant to store power. We need to safeguard this through the installation of thunder arrestors on masts.

The most important is the safety of lives of our children and staffs. Thunder is very dangerous to the lives of people if it mistakenly strike in human direction or part. We have heard of stories of thunder killing people in school, homes, offices or where ever it comes directly to people parts. This level of thunder experienced in this zone has destroyed some of our inverters and electronic gadgets twice and we are seeking for a permanent solution. The solution available to us in this environment is the installation of Preventron 3 (Indelec) Thundering arresting system at three coverage points within the center. This particular device needs to be seated on an 18 feet mast due the topography of the children center been uneven. This we need to put in place before the onset of next raining season when thunderstorms are most virulent.

However, the challenge here is that we are located on a thunderstorm belt and we require protectors for the solar energy room. To protect the centers electrical installations within the facility from thunderstorm destruction we need to install thunder arrestors on masts of eighteen feet each at three locations within the center to protect lives and property.

We have invited electrical engineers to survey the environment and give professional recommendation which is what is explained above. A trained staff is also understudying the process and will be mentored to maintain these preventive installations eventually when we have them.

The current need is to raise the sum of funds to install three Indelec Thunder Arrestors on three masts at strategic locations within the organisation

## ***Project outcome:***

- Elimination of the Incidences of sudden power outage as a result of thunder strikes with the erection of the mast with Indelec 3 thunder arrestor on it.
- Safety index of our organization and human lives increased.
- Prevention of dangers arising from thunderstorms.
- Protection of all electronic gadgets from surges as a result of thunder strikes passing through the inverters.
- Current surge truncated and therefore loss or destruction of power storage capacity also prevented.

## Partner (s)

- The technical and sales company for Indelec arrestor.
- The Mast Fabricating Company.
- Organisation Staff in the maintenance unit.
- The technical expertise and cooperation we have enjoyed from Danish Engineers without borders.

## Work plan

	<b>Activity</b>	<b>Timeline</b>	<b>Person(s) responsible</b>	<b>Expected result</b>
1	Sourcing for contractors Activities Bidding Procurement	Week One to three	Land of Hope Staff	Contractors Recruited
2	Environment Scanning and planning for project	Week Four to Five	Land of Hope	Readiness of a project implementation plan
3	Commencement of Project	Week seven	Supervising Officer and Contractors	Daily requirements for deliverables met
4	Construction of project sites and mentoring of facility maintenance officers	Week eight to ten	Supervising Officer and Contractors	Daily requirements for deliverables met
5	Project monitoring	From week one to eleven	Supervising Officer and Contractors	Daily requirements for deliverables met

6	Project Evaluation and Review Report	Week Twelve	Administrative officer, Supervising officer and Contractors	Requisition standards met and maintenance guide availability
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#### BUDGET

SN	ACTIVITY/	UNIT COST	NO OF PERSONS/ ITEMS	NO OF DAYS	TOTAL NAIRA	TOTAL in Euro Rates €1 to 390 Naira	COMMENTS
	Administration	666	1	90	60,000	153.85	The administrative staff overseeing sourcing of construction firm, finance processes and documentation will spend a third of their time on this project.

	Maintenance staff understudying the project to ensure sustainability	1,500	1	90	135,000	346.15	Full time on the construction
				Sub total	195,000	500	
<b>Labour for Mast setting</b>							
	Earth driller	3,000	2	15	90,000	230.77	
	Bricklayer	3,000	2	15	90,000	230.77	
	Scaffolder for mast setting	3,000	2	15	90,000	230.77	
	Mast setter	5,000	1	15	225,000	576.92	
	Assistant	1,500	2	15	45,000	115.39	
	Supervisor	5,000	1	45	225,000	576.92	
	Transportation of Earthing Materials	50,000	1	1	50,000	128.20	
	Transportation of Mast and Equipment	50,000	1	2	100,000	256.41	Round trip for returning of scaffolder
				Sub total	915,000	2346.15	
<b>Labour for EARTHING SYSTEM</b>							
	Civil works and Calibration	20,000	2	3	120,000	307.69	
	Foreman	3,000	15	2	90,000	230.77	
	Earthing testing	300,000	1	1	300,000	769.23	
	Soil testing	10,000	8	1	80,000	205.13	

				Sub total	590,000	1512.82	
<b>MATERIALS QUOTATION FOR EARTHING SYSTEM</b>							
	<b>ACTIVITY/ MATERIALS</b>	<b>UNIT COST</b>	<b>NO OF PERSO NS/ ITEMS</b>	<b>NO OF DAYS</b>	<b>TOTAL in NAIRA</b>	<b>TOTAL in Euro at Rates €1 to 390 Naira</b>	<b>COMMENTS</b>
	Indelec Preventron Ts25 3	495,193.61	5	1	2,475,968.05	6,348.64	
	Indelec Preventron Ts10 3	390,000.00	2	1	780,000.00	2,000	
	Flash counter	185,000.00	4	1	740,000.00	1,897.44	
	25mm x 3mm bare copper	3,360.00	200	1	672,000.00	1,723.08	
	4 Ft earth rod couplers	1,680.00	40	1	67,000.00	171.80	
	Earth rod couplers	2,100.00	30	1	63,000.00	161.54	
	Conductor clamps	1,400.00	20	1	28,000.00	71.80	
	Oblong Join	3,500.00	10	1	35,000.00	89.74	
	Inspection pit chamber	28,000.00	4	1	112,000.00	287.18	
	Earth mat	7,000.00	4	1	28,000.00	71.80	
	Earth bar	7,000.00	3	1	21,000.00	53.85	
	16 mm Earth cable	1,120.00	60	1	67,200.00	172.31	
	Square joint	2,100.00	3	1	6,300.00	16.15	
	Elevation pole and bracket	9,800.00	4	1	39,200.00	100.51	
	Copper clips	280.00	25	1	7,000.00	17.95	

	Stainless cable tie	25,000.00	Lots	1	25,000.00	64.10	
	Soil treatment	35,000.00	4	1	140,000.00	358.97	
	15mm mast	700,000.00		1	700,000.00	1,794.87	
			5% VAT:		300,333.40	770.09	
				Sub total	6,006,668.05	15,401.73	

**MATERIALS AND EQUIPMENT QUOTATION FOR MAST**

	<b>ACTIVITY/ MATERIALS</b>	<b>UNIT COST</b>	<b>NO OF PERSONS/ ITEMS</b>	<b>NO OF DAYS</b>	<b>TOTAL</b>	<b>TOTAL in Euro at Rates €1to 390 Naira</b>	<b>COMMENTS</b>
	3" Angle iron steel 5mm	27,800	13	1	361,400	926.67	
	2" Angle iron steel 4mm	20,600	52	1	1,071,200	2,746.67	
	Bolt, nuts and washers 16mm	800	420	1	336,000	861.54	
	Bolt, nuts and washers 13mm	650	430	1	279,500	716.67	
	16mm Steel plate	12,500	3	1	37,500	96.15	
	4 x 8 x 10mm steel plate	325,000	1	1	325,500	834.62	
	1 carton of 3.2 electrode 70 18	46,000	1	1	46,000	117.95	
	Cutting Stone	2,500	30	1	75,000	192.31	
	Filling Stone	500	5	1	2,500	6.41	
	Oxy - acetylene	85,000	1	1	85,000	217.95	

	Red oxide paint	9,000	5	1	45,000	115.39	
	Brush	500	15	1	7,500	19.23	
	Primer	8,500	15	1	127,500	326.92	
	Transportation	L/S	L/S	1	50,000	128.21	
	Lincoln Welding machine	60,000	2 days	1	120,000	307.69	
	Offloading	L/S	L/S	1	15,000	38.46	
	Diesel 50 Liters	40,000	2 days	1	80,000	205.13	
	White paint	7,500	5	1	37,000	94.87	
			5% VAT:		155,080	397.64	
				Sub total	3,101,600	7,952.84	
				<b>GRAND TOTAL</b>	10.808,268 Naira	27.457,12 Euro	

Acronym: L/S lump sum