TechnicalSpecifications

Thebiddermustfurnishdocumentaryevidenceintheformofliterature(catalogue),certified Dimensional drawings, and detailed description of goods with essential technical information. Alldata, drawings, catalogues and othertechnical documentsshall be bound separately from the Biddocuments.

TheBiddershallfurnishaclause-by-clausecommentaryonspecification, complianceanddeviations,ifany.**Thismustbefurnished;otherwise,theBidwillberejected.**

1. BATTERY

SN	Description	Specification	Bidder proposal (Documentfrommanufacturers howingtheproposed parameter ismandatory.Pleasehighlightthe parameter in the technicalspecification)	**Bidder's Remarks ***
1.1	Manufacturer Name	NA		
1.2	Brand/Model	NA		
1.3	CountryofOrigin	NA		
1.4	BatteryType	Li-IonBattery(LiFePO4)		
1.5	BatteryVoltage	shouldbecompatibletos ystemvoltage		
1.6	BatteryEfficiency	85%		
1.7	Quantity (mentioncapacity)	Individualbatterymustbeo fatleast **TYPE-4:** ForLiFePO4- atleast75AH (900Whr)		
1.8	Self-Discharge	Lessthan3%permonth		
1.9	OperatingTemperat ure	-5℃to 55℃		
1.10	Instruction	Charginginstructionsshall be provided along with thebatteries		
1.11	Warranty	MinimumWarrantyof5 years.		
1.12	BatteryLifeCycle	Atleast2500Cycleat80% DOD		

1.13	Certifications	IEC 62619: *Bidder mustprovide Certificate* fromIEC accredited laboratory.Must have certificate ortest report of safetyprotectionfunctions ofthebattery pack withBMS.ISO9001,ISO14001 RETSCertificates -RETS certificate canbeeithersubmittedwithbid or at the time ofinstallation		

The following minimum information must be included on the label of the battery andlabelofbatterymustbefixedfirmlyorscreenprintedonthebatterycasing:

1. BrandandnameofManufacturer
2. Model andtype
3. RatedcapacityinAmpere-hours
4. NominalVoltage

2. Solar PVModules

SolarPVModuleswillbeprocuredfrom companies,complyingwiththe standardsetforthinNepalbyAEPC.PV modulesshalltypicallybetestedfordurabilityand reliabilityaccordingtostandardsdevelopedbytheInternationalElectro-TechnicalCommission.Standards IEC61215(forcrystallinesiliconmodules)include,amongstothers,testsforthermalcycling, humidity andfreezing,mechanical stress and twist,hail resistance and performanceunderfixedtestconditions.

SN	Description	Specification	Bidder Proposal *(Document from manufacturer showing theproposedparameter is mandatory. Please highlighttheparameter in the technical specification)*	Bidder's Remarks*
2.1	Manufacturer Name	NA		
2.2	Brand/Model	NA		
2.3	CountryofOrigin	NA		
2.4	ModuleCapacity	Type4:Min.200Wp		
2.5	PVmoduleType	MonoorPolyCrystalline		

2.6	Operatingvoltage corresponding tothe power output(Vmp)	17.5Vmpforeach moduleof12V		
2.7	MinimumMo dule efficiency:	14%		
2.8	Powerdegrad ation	Aletterprovidedbyprinci palPVmodulemanufactu rer in theirletter head stating thewarrantyperiodforth eirPVmodule. Thewarrantyperiodforthe PVModulemustbeatleast1 0yearsagainstamaximum 10%reduction and20yearsagainsta maximum200/4red uctionof outputpoweratSTC.		
2.9	JunctionBox	**I**P65orabove		
2.10	ModuleMountedSt ructure	noncorrosivesupportstr ucturestobefixedontheto pofpole		
2.11	TiltAngleanddirect ion	towards due southaroundlocallat itude		
2.12	Supportstructure design and foundationmount ingarrangements shouldwithstand	WindSpeedupto180k m/hr		
2.13	Fasteners(nuts andbolts)	StainlessSteelorhot deepgalvanized.		
2.14	IEC61215 (2nd Edition)	**Crystalline**silicon terrestrial photovoltaic(PV) modules - DesignQualification and typeapproval.		
2.15	IEC61730	PVmodulesafetyqualificat ion		

2.16	Certifications	ISO9001andISO14001 **RETSCertificates** - PITcertificatemustbesubmittedwithbid - RSTcertificatecanbeeitherssubmittedwithbidorattheti meofinstallation		

3. ChargeController

SN	Description	Specification	Bidder Proposal *(Documentfrom manufacturer showing theproposed parameter is mandatory.Please high light the parameter inthetechnicalspecification)*	Bidder'sRemarks*
3.1	Manufacturer Name	NA		
3.2	Brand/Model	NA		
3.3	Countryof Origin	NA		
3.4	Type	PWM/MPPT		
3.5	Control Mode	DusktoDawn(VoltageSensingPWMorMPPT) i.e.,thelampautomatically switchesONaftersunsetandswitches OFF aftersunrise. Alsoincludeatleasttwostateofdimming function.		
3.6	WorkingTemperature &Humidity	-5to+55"C/35to85%RH (Withoutcondensation)		
3.7	Protection Function	Solarreverse-chargingprotection,solarreverse-connectionprotection,batteryoverchargeprotection,batteryover-dischargeprotection,batteryreverse-connection protection		
3.8	Current Rating	15-20Amp		
3.9	Certifications	**RETSCertificates** -PIT certificate must besubmittedwithbid -RST certificate can beeither submitted withbidoratthetimeof installation		

4. SolarStreetLight

SN	Description	Specification	Bidder Proposal(*Document frommanufacturer showingtheproposedparameteris mandatory. Pleasehighlight theparameterinthetechnical specification)*	Bidder'sRemarks*
4.1	Manufacturer Name	NA		
4. 2	Brand/Model	NA		
4 .3	CountryofOrigin	NA		
4 .4	Type	WLED		
4.5	LuminousEfficacy	Atleast100 Lumen/Watt		
4.6	LEDIllumination	Street lamp shouldhavenotlessthan0.5Lux/wattperpendiculars fromtheheightof8m.Theilluminationshould be uniform withoutdarkrashesonthe ground.		
4.7	ViewAngle	Equalorgreaterthan 2*50		
4 .8	Color RenderingIndex (CRI)	CRIofindividualWLED mustnotbelessandthen60andthecolortemperaturemustbeintherangeof(5000-6000)degree K		
4.9	LampRatedTotal Power	Type4:40-45W		
4.10	ControlFunction	Musthaveautomaticdusktodawnfunction.Alsoincludeatleasttwostatesof dimmingfunction.		
4.11	DriverCircuit	MusthaveDriverCircuitcumChargeController with notlessthan85% efficiency.		

4.12	Protection	Thelampmustbeprotectedagainst reversedpolarity		

4.13	Certification	MustSubmitIP65orabovecompliancecertificate **RETSCertificates** -PIT certificate mustbesubmittedwithbid -RST certificate can beeither submitted withbidoratthetimeofinstallation		
4.14	Lifecycle	30,000Hrs		

Thefollowingminimuminformationmustbeincludedinthescreen-printedlabeloftheWLEDlamp

- ✓ Brand/Model/SerialNumber
- ✓ NominalPowerinWatt
- ✓ NominalVoltage

5.StreetLightPole

SN	Description	Specification	**BidderProposal** *(Documentfrom manufacturershowing theproposedparameter ismandatory.Please highlighttheparameter inthe technical specification)*	**Bidder's Remarks***
5.1	Manufacturer Name	NA		
5.2	Type	HotDeepGalvanized (minimum coating80micron)		
5.3	Height	Type4:7.5mabovegroundlevel		
5.4	Thickness of Pole	Type4:9-meterpole:Top2.0meter:3.25mm Middle2.0meter:4.5mm Bottom5.0meter:4.85mm		
5.5	Diameter	Type4:9-meterpole: Top2meter:Atleast3-inchMiddle 2 meter:Atleast 4inche Bottom5meter:Atleast5inch		
5.5	Arm	Single arm		
5.6	Joint	TaperedJoint		

		Aventedacidproofandcorr box withalocking		
		arrangementforoutdoorusesh ouldbeprovidedforthe housingofthebattery		

6. Others

Bos/ItemComponent	ApplicableStandard	
	StandardDescriptionStandard	Cables
Switches/Circuit Breakers/Connectors	GeneralRequirementsConnectors-safety	NS/IS standard
SSLSystemDesignandInstallationPractices	SSLStand-aloneSystemdesign.verificationandelectrical installation of pole requirements forSSLpowersupplysystems	NS/IS Standard

7. CivilWorks

The civil works for the proposed Solar Street Lighting System shall include Solar StreetLightpoledesignand installationatthedifferentplaceswithin**KedarsyunRuralMunicipality** area. The structure should be facing south direction tilted at 30 degrees.Mountingstructuremustbedesignedaccordingly.Itshouldbeabletowithstand180KM /hrwindspeedandsupporttheinstalledsolarmodules.

- ✓ BiddermustprovidethetechnicaldesignanddrawingoftheSSLPole.
- ✓ Biddermustprovideevidenceandcalculationshowingthestructureproposedissafetobeputonthe topofpole.