

ސަރުކާރުގެ ސަރަޙައްދުގައި

ހަދުހުނުމަތީ ރާއްޖޭގެ ޖުމްހޫރިއްޔާ ގުޅިގެން ސަރުކާރުގެ ސަރަޙައްދުގައި	ސަރުކާރުގެ ސަރަޙައްދުގައި
(IUL)240-CA/240/2024/48	ހަދުހުނުމަތީ ރާއްޖޭގެ ޖުމްހޫރިއްޔާ ގުޅިގެން ސަރުކާރުގެ ސަރަޙައްދުގައި
31 ޖުލައި 2024	ހަދުހުނުމަތީ ރާއްޖޭގެ ޖުމްހޫރިއްޔާ ގުޅިގެން ސަރުކާރުގެ ސަރަޙައްދުގައި
PC-240/2024/G-08	ހަދުހުނުމަތީ ރާއްޖޭގެ ޖުމްހޫރިއްޔާ ގުޅިގެން ސަރުކާރުގެ ސަރަޙައްދުގައި



1. ބަނޑު ބޭނުންކުރުން

މި ރަށުގެ ބަނޑު ބޭނުންކުރުމަށް 2024 ވަނަ އަހަރުގެ 12 ޖަނަވަރީ ވަނަ ދުވަހުގެ 13:00 ގައި ފަށާ ފަށާ ގޮތުގައި ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވެއެވެ. ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވާ ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވާ ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވެއެވެ.

މި ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވާ ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވެއެވެ.

2. ބަނޑު ބޭނުންކުރުން

މި ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވާ ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވެއެވެ. ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވާ ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވެއެވެ.

11 ޖަނަވަރީ 2024 ވަނަ އަހަރުގެ 13:00 ގައި ފަށާ ފަށާ ގޮތުގައި

2.1 ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވާ ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވެއެވެ. 12 ޖަނަވަރީ 2024 ވަނަ ދުވަހުގެ 12:00 ގައި ފަށާ ފަށާ ގޮތުގައި 13 ޖަނަވަރީ 2024 ވަނަ ދުވަހުގެ 13:30 ގައި ފަށާ ފަށާ ގޮތުގައި.

procurement@laamu.gov.mv ގައި ފޮތު ފޮނުވުމަށް
6800713 ގައި ފޯން ޖެހުމަށް

2.2 ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވާ ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވެއެވެ. 12 ޖަނަވަރީ 2024 ވަނަ ދުވަހުގެ 13:00 ގައި ފަށާ ފަށާ ގޮތުގައި 13 ޖަނަވަރީ 2024 ވަނަ ދުވަހުގެ 13:00 ގައި ފަށާ ފަށާ ގޮތުގައި.

2.3 ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވާ ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވެއެވެ.

ރަށުގެ ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވާ ބަނޑު ބޭނުންކުރުމަށް ފުރުޞަތު ހުޅުވާލެވިފައި ވެއެވެ.
18 ޖަނަވަރީ 2024 ގައި ފަށާ ފަށާ ގޮތުގައި
13:00 ގައި ފަށާ ފަށާ ގޮތުގައި



9.6 9.7 9.8 9.9 9.10 9.11 9.12

9.6 9.7 9.8 9.9 9.10 9.11 9.12

9.7 9.8 9.9 9.10 9.11 9.12

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9.11 9.12

9.12



- Short Circuit Current

PV modules to be used in highly corrosive atmosphere throughout their lifetime and must qualify to IEC 61701 (photovoltaic (PV) modules – Salt mist corrosion testing)

- The total power shall be obtained by streams of PV modules.
- PV modules shall be either **monocrystalline OR polycrystalline**.
- PV modules shall be in 1/3-cut cell layout Mono PERC technology.
- PV modules shall be PID resistant.
- PV modules shall be aluminum framed with hard face covers.
- PV module selection shall be made from state of the art of the PV technology with the best relation space/production as possible.
- PV module brand/s should be declared with **datasheet** and justified.
- Stream voltages should be average voltage to avoid losses on low voltage transfer which increases the length of wiring and not too high to avoid magnetic field production with relevant thunder shot possibility.
- PV modules shall come to the site properly tested and in good packaged to avoid any damage.
- PV modules shall be guaranteed for 20 years power performance with not more than 2% power degradation in first year and 0.55% annual power.
- attenuation.
- PV modules shall be guaranteed for 10 years against any kind of production defect.

The module framing (if applicable) should be such that it permits secure connection to the mounting structure, prevents edge damage, and has the longevity to withstand environmental factors for the duration of the module warranty period.

The module framing and modules shall be compatible with both the roof mount structure, and compatible with the earthing requirements.

PV Modules shall be provided with 14-12 AWG (2.5mm² - 4mm²) **fly leads and a cable length sufficient for interconnection of modules into strings without any additional wiring**. Connectors shall full fill the requirements of IEC 62852.

Integrated bypass diodes shall be installed in the junction box of every PV module.

Each PV module shall be provided **with a unique identification code** by the manufacturer as per their standards.

2. PV Cable

2.1. General Information

All DC string cables shall be of PV1-F type.

All DC cables shall be permanently shaded from UV radiation.

The conductors of the cables shall be made of annealed copper in accordance with IEC 60228 in flexible UV resistant sheath.

2.2. Cable Connections

DC cable connections on string level shall be realized with connectors MC4, TYCO or equivalent of the same type and same manufacturer.

Connectors shall fulfill the requirements of IEC 62852.

All connectors shall be of the same brand. Connectors which are compatible but not of the same brand shall be not allowed.



3. AC Cables

3.1. General

These specifications define the requirements for multi-core copper conductor, cross linked polyethylene (XLPE) insulated, and PVC sheathed, 600/1000 Volts, power cables as per the latest IEC / BS standards, or other equivalent recognized reputable international standards.

De-rating factors due to temperature, grouping (or bunching), method of installation, nature of usage, prospective short-circuit etc. shall be taken into consideration. After de-rating, the current carrying capacity of the cable shall be at least 5% greater than the upstream protection of the switchgear.

Auxiliary multi-core control cables shall be PVC or XLPE insulated, and PVC sheathed.

3.2. Conductor

Conductors shall be annealed copper stranded conductors complying with IEC 228 or BS 6360, or other equivalent recognized reputable international standards. Unless otherwise specified XLPE insulated cable mains and sub-mains shall have full-sized neutral conductors.

4. Mounting Structure

4.1. General Information

The PV module mounting structure shall meet and comply with the requirements of the PV module manufacturer.

4.2. Materials and Installation Rooftop Type for Consideration

Roof coverings are made of corrugated sheets of standing-seam type or trapezoidal/box type profile. Roofs are Lysaght Trapezoidal Steel Sheets (0.47mm thick) with the following dimensions, but the selected systems shall be selected by the Bidders to be flexible enough to adapt to roofs sheets with potentially different measures:

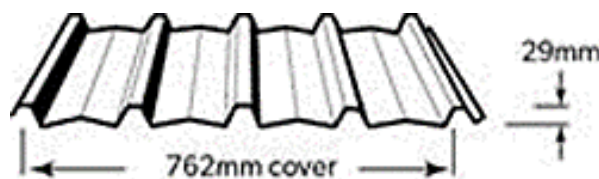


Figure 18: Typical Trapezoidal Roof Sheet

A clamp type system or specialized system compatible with the trapezoidal roof sheet profiles and the PV modules supplied shall be used with inbuilt waterproofing mechanisms. The array mounting superstructure shall be bolted to roof fasteners (which shall be L-foot type).

5. PV Inverters

5.1. General Introduction

The inverters shall be selected and sized by the requirement to ensure a safe and efficient functioning together with the PV solar system electrical characteristics (among others for the Maximum Power Point (MPP) range in accordance with the climatic conditions prevailing on the island).

The Bidder shall use **On -Grid Inverter concepts**.

5.2. Three Phase Inverter

1. The contractor shall supply all necessary on-grid inverters for the correct operation of the system, and which allow for future expansion of the PV power plant in phases.
2. The council expects the contractor to propose robust, reliable, and low failure rate proven inverters which can work efficiently for more than 10 years without any major failure in hot and humid environments.
3. The contractor shall provide details of the following characteristics for each inverter.
 - i. Max input power
 - ii. Max output power
 - iii. Efficiency rating



- iv. Protection features
 - v. Voltage and power ratings
 - vi. Communication capabilities
 - vii. Operating parameters
 - viii. Controls and displays.
 - ix. Standards and certifications
4. The inverters shall have an efficiency of 97% and above.
 5. The inverters shall have an inbuilt DC isolation switch.
 6. The inverters shall have surge protection.
 7. The inverter must have the capability to monitor.
 8. The inverters brands must be from one of the brands.
 - i. ABB
 - ii. Enphase Energy
 - iii. Huawei
 - iv. Fronius International GmbH
 - v. Gin long Solis
 - vi. SMA Solar Technology AG

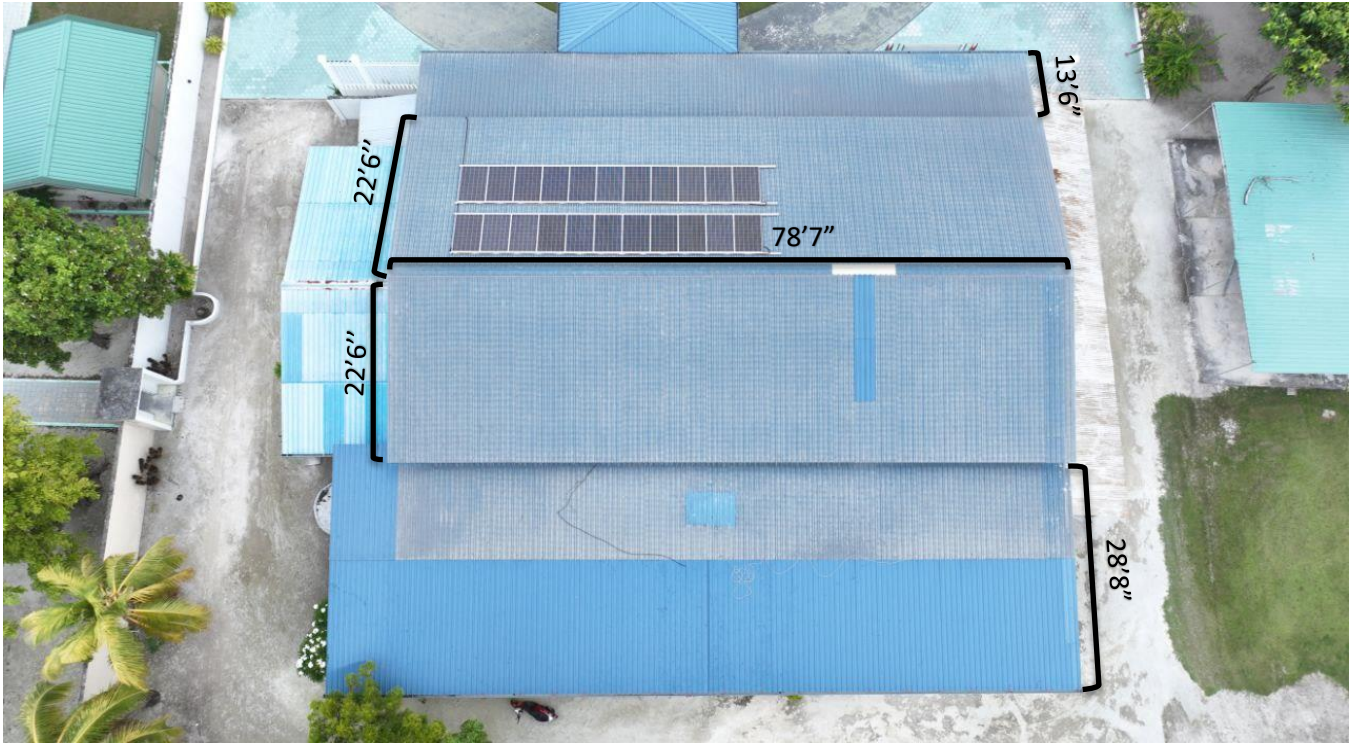
5.3. Warranty:

1. Inverter must have minimum 5 Years warranty.
2. PV modules used must be warranted by the manufacturer for output wattage, which should not be less than 90% within the first 10 years and 80% at the end of 20 years.
3. The contractor must be responsible for service warranty at least 1 year from the date of PV panel commissioning date.



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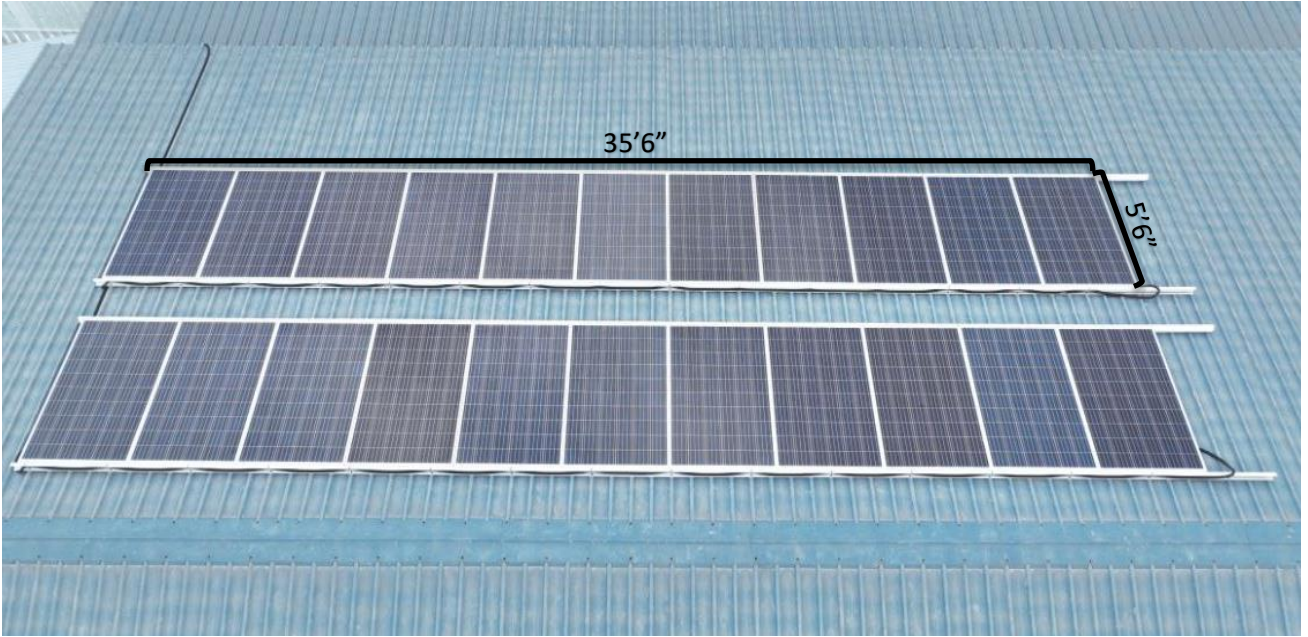
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3 - 3

ދިވެހިސަރުކާރުގެ ގެޒެޓްގައި ބަޔާންކޮށްފައިވާ ގޮތުގައި

ބަޔާންކޮށްފައިވާ ގޮތުގައި:



3 ވަނަ ބައި

1. ދިވެހިސަރުކާރުގެ ގެޒެޓް ގައި ބަޔާންކޮށްފައިވާ ގޮތުން:		
	ސަރުކާރު	-1.1
	ބަނޑު ސަރުކާރުގެ ދަށުން ހިންގާ ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު	-1.2
	ވިޔަފުހެރުގެ ލިސްޓު	-1.3
	ބަނޑު ސަރުކާރުގެ ދަށުން ހިންގާ ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު	-1.4
	ބަނޑު ސަރުކާރުގެ ދަށުން ހިންގާ ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު	-1.5
	ބަނޑު ސަރުކާރުގެ ދަށުން ހިންގާ ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު	-1.6
	ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު	-1.7
	ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު	-1.8
2. ދިވެހިސަރުކާރުގެ ގެޒެޓް ގައި ބަޔާންކޮށްފައިވާ ގޮތުން (ސަރުކާރުގެ ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު ހިމެނޭ ގޮތުން ބަނޑު ސަރުކާރުގެ ދަށުން ހިންގާ ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު، ބަނޑު ސަރުކާރުގެ ދަށުން ހިންގާ ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު، ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު، ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު، ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު)		
#	ސަރުކާރު	މަޢުލޫމާތު
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3. ފަރާތްތަކުގެ ނަންބަރުތަކުގެ ލިސްޓު		
1		
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4- ބަލަވާ ދަރިފުޅު
ބަލަވާ ދަރިފުޅު

Form of Bid Security (Bank Guarantee)

WHEREAS,[*name of Bidder*] (hereinafter called “the Bidder”) has submitted his Bid for the Project no.....issued by the Ministry of Finance and Treasury onfor construction of[*name of Contract*] (hereinafter called “the Bid”).

KNOW ALL PEOPLE by these presents that We [*name of Bank*] of [*name of country*] having our registered office at (hereinafter called “the Bank”) are bound unto [*name of Purchaser*] (hereinafter called “the Purchaser”) in the sum of *..... for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents.

SEALED with the Common Seal of the said Bank thisday of20.....

THE CONDITIONS of this obligation are:

- (1) If, after Bid opening, the Bidder withdraws his Bid during the period of Bid validity specified in the Form of Bid;
or
- (2) If the Bidder having been notified of the acceptance of his Bid by the Purchaser during the period of Bid validity:
 - (a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or
 - (b) fails or refuses to furnish the Performance Security, in accordance with the Instruction to Bidders; or
 - (c) does not accept the correction of the Bid Price pursuant to Clause 27,

* The Bidder should insert the amount of the Guarantee in words and figures denominated in Maldivian Rufiyaa. This figure should be the same as shown in Clause 16.1.7 of the Instructions to Bidders.

we undertake to pay to the Purchaser up to the above amount upon receipt of his first written demand, without the Purchaser’s having to substantiate his demand, provided that in his demand the Purchaser will note that the amount claimed by him is due to him owing to the occurrence of one or any of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date days after the deadline for submission of bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Purchaser, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE..... SIGNATURE OF THE BANK
WITNESS SEAL

[signature, name, and address]



ޖަހަވާރު ގެ ޖަހަވާރު ގެ ޖަހަވާރު

Form of Performance Bank Guarantee (Unconditional)

To:
[name & address of Purchaser]

WHEREAS [name and address of Supplier] (hereinafter called "the Supplier") has undertaken, in pursuance of Contract No. dated to execute [name of Contract and brief description of Works] (hereinafter called "the Contract");

AND WHEREAS it has been stipulated by you in the said Contract that the Supplier shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with his obligations in accordance with the Contract;

AND WHEREAS we have agreed to give the Supplier such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Supplier, up to a total of *..... [amount of Guarantee] [amount in words], such sum being payable in the types and proportions of currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of [amount of Guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

*An amount is to be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract, in Maldivian Rufiyaa.

We hereby waive the necessity of your demanding the said debt from the Supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the Works to be performed there under or of any of the Contract documents which may be made between you and the Supplier shall in any way release us from any liability under this Guarantee, and we hereby waive notice of any such change, addition, or modification.

This Guarantee shall be valid until the date of issue of the Defects Correction Certificate.

SIGNATURE AND SEAL OF THE GUARANTOR

Name of Bank

Address

Date



