





SUB-SECTION – A-1



PROVENNESS



CLAUSE NO.		PROVENNESS	
<p>1.0</p> <p>(a)</p> <p>(b)</p> <p>2.0</p>	<p style="text-align: center;">PROVENNESS (To be included in technical specification)</p> <p>The bidder/its sub-vendor(s) is required to meet the provenness criteria and/or qualification requirement for the items/ services listed below as per the stipulated criteria indicated in the respective clauses. For the purpose of qualification of Bidders / Sub-vendor(s), experience shall be reckoned as on the date of consideration for approval but not later than six months after award date of STG Island package unless otherwise specified in the respective clauses.</p> <p>Provenness of Turbine Set</p> <p>The turbine set offered shall be built up using proven design modules of HP, IP (or Combined HP-IP ,if applicable) and LP turbines of the Qualified Steam Turbine Generator Manufacturer. The offered HP turbine module should have been in successful operation with Super critical pressure and Main steam temperature of 593 deg C or higher for a period of not less than one (1) year prior to the date of techno commercial bid opening. The offered IP turbine module should have been in successful operation with Reheat steam temperature of 593 deg C or higher for a period of not less than one (1) year prior to the date of techno commercial bid opening. In case Combined HP-IP turbine module is offered it shall meet the respective requirements of HP turbine and IP turbine modules as above. The offered LP turbine module should have been in successful operation for a period of not less than one (1) year prior to the date of techno commercial bid opening. The Bidder shall furnish experience list of HP, IP (or Combined HP-IP) and LP turbine modules offered to substantiate their provenness along with the techno commercial bid.</p> <p>The turbine to be supplied under this contract shall be manufactured, assembled and tested in a factory where turbines of at least 500MW rating have been manufactured in the past. Alternatively the same can also be manufactured in the Indian Manufacturing Company under supervision of Qualified Steam Turbine Generator Manufacturer.</p> <p>On-line Blade Vibration Monitoring System for Low Pressure (LP) Turbines (in case Free Standing Blades are offered)</p> <p>The Bidder/sub-vendor should have designed, engineered, supplied, installed and commissioned at least one (1) number of Integrated On-line Blade Vibration system for health monitoring/Crack Detection of free standing blades of Low Pressure Turbine of Steam Turbine Generator set of 200 MW or above capacity. This integrated system* should have been in successful operation at each installation for at least 7000 operating hours prior to the date of techno-commercial bid opening. The Bidder should offer and supply the integrated system* of same Make and type for which it/its sub-vendor meets the above requirement.</p> <p style="text-align: center;">OR</p> <p>The Bidder/sub-vendor should have designed, engineered, supplied, installed and commissioned at least one (1) number of On-line Blade Vibration integrated system* for health monitoring/Crack Detection of free standing blades of Compressor/Turbine of Gas Turbine Generator set** of 200 MW or above capacity. This integrated system* should have been in successful operation for at least 7000 operating hours prior to the date of techno-commercial bid opening. The Bidder should offer and</p>		
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<p>3.0</p> <p>a)</p> <p>b)</p> <p>4.0</p> <p>4.1</p>	<p>supply the integrated system* of same make and type for which it/its sub-vendor meets the above requirement.</p> <p>* integrated system means complete system combining both hardware and software and sensors mounted inside turbine casing, directly seeing the blades in non-contact manner.</p> <p>** In case of combined cycle gas stations, Gas Turbine Generator set capacity means capacity exclusively of Gas Turbine Generator set.</p> <p>Architect Engineering Firm</p> <p>The Bidder / the Architect Engineering firm should have carried out Engineering of at least one (1) no. of fossil fuel fired reheat type steam turbine generator, with minimum unit rating of 500 MW, consisting of steam turbine generator sets along with regenerative heating and pumping system which is in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening.</p> <p>As an alternative to (a) above, the Bidder shall get the engineering of the Steam Turbine Generator Island package done either by (i) Qualified Steam Turbine Generator Manufacturer or (ii) by an architect engineering firm who is currently in the field of engineering fossil fuel fired plants and has engineered at least one (1) no. of fossil fuel fired plant with minimum capacity of 500MW, which is in successful operation for a period of not less than one (1) year prior to the date of techno-commercial bid opening. However, in such a case, the Bidder shall get the basic engineering documents (schematics, sizing calculations and equipment selection) prepared by such architect engineering firm vetted either by the Qualified Steam Turbine Generator Manufacturer or by another architect engineering firm who fully meets the requirements stipulated at (a) above.</p> <p>Note</p> <p>1. In case note (4) for clause 1.0.0 is used for meeting the requirements of the Qualified Steam Turbine Generator Manufacturer, then the subsidiary Company having experience as per 1.1.1 for the Steam Turbine shall be considered as Qualified Steam Turbine Generator Manufacturer for the purpose of engineering.</p> <p>Provenness criteria for critical equipment(s) and bought out items</p> <p>The Bidder / its sub-vendor(s) is required to meet the provenness criteria and / or qualification requirement for critical equipment, auxiliaries, systems and bought out items as per criteria stipulated below:</p> <p>Condenser, Condensate Extraction Pumps (CEP), Condenser air evacuation pump, Feed Water Low Pressure Heaters, Feed water High Pressure Heaters, Deaerator, Boiler Feed Pumps (BFP), HP Bypass system, and LP Bypass system offered by the Bidder shall be only from such manufacturer(s) who has previously designed (either by itself or under collaboration / licensing agreement), manufactured / got manufactured the respective equipment(s) of the type and minimum equipment rating as stipulated below such that the respective equipment(s) are in successful operation in at least one (1) plant for a period not less than one (1) year</p>		
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Sl. No	Name of equipment	Type of equipment	Equipment rating
a)	Condenser	Surface type water cooled for steam turbine generator sets	Condenser of a 500 MW or higher size unit
b)	Condensate Extraction Pumps (CEP)	Vertical, cannister with double suction first stage impeller for steam turbine generator sets	Capacity not less than 900 Ton/ hr and total developed Head not less than 30 Kg/cm ² Or Capacity not less than 770 Ton/ hr (in case drip pumps are used) and total developed Head not less than 30 Kg/cm ²
c)	Condenser Air Evacuation Pump	Liquid ring type for steam turbine generator sets	Free dry air capacity 20SCFM at 1" of Hg (abs) at 21.1 deg C
d)	Feed Water Low Pressure Heaters	Horizontal, U-tube type having condensing and drain cooling zones for steam turbine generator sets	Feed Water Low Pressure Heater of a 500 MW or higher size unit
e)	Feed water High Pressure Heaters	Horizontal, U-tube type having integral desuperheating, condensing and drain cooling zones for steam turbine generator sets	Feed Water High Pressure Heater of a 500 MW or higher size unit
f)	Deaerator	Horizontal/Vertical, direct contact, spray or spray cum tray design for steam turbine generator sets	Deaerator of a 500 MW or higher size unit
g)	Boiler Feed Pumps (BFP)	Horizontal, centrifugal, multistage, outer casing barrel type with end rotor removal for supercritical steam turbine generator sets	Capacity not less than 1100 Ton/ hr and total developed Head not less than 320 Kg/cm ²
h)	HP Bypass	HP Bypass system for	Capacity of each valve



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	Sl. No	Name of equipment	Type of equipment	Equipment rating
		system	supercritical steam turbine generator sets	not less than 650 Ton/hr at specified rated steam parameters (i.e. pressure & temperature)
	i)	LP Bypass system	LP Bypass system for steam turbine generator sets	Capacity of each valve not less than 650Ton/hr at specified rated steam parameters (i.e. pressure & temperature)
4.2	<p>Bidder shall offer and supply only the type of the above equipment(s) for which it, itself or the manufacturer proposed by the Bidder for the above equipment(s) is qualified.</p>			
4.3	<p>In case the Bidder or the proposed sub-vendor(s) is not manufacturer of proven equipment(s) as per clause 4.1 above but is a manufacturer for such equipment(s) for units of at least 500MW rating, the Bidder or the proposed sub vendor(s) can manufacture such equipment(s) for 660 MW supercritical units also provided it has collaboration or valid licensing agreement for design, engineering, manufacturing, supply of such equipment(s) in India with such manufacturer(s) who meet the requirements stipulated at clause 4.1 above for the respective equipment(s).</p>			
4.4	<p>A JV / Subsidiary Company formed for manufacturing and supply of equipment(s) as listed at clause no 4.1 above in India, can also manufacture such equipments provided that it has a valid collaboration or licensing agreement for design, engineering, manufacturing of such equipment(s) in India with a qualified equipment manufacturer who meets the requirements stipulated at clause 4.1 above (or the technology provider of the qualified equipment manufacturer). Further, in such a case, such qualified equipment manufacturers should have, directly or indirectly through its holding Company/ subsidiary Company, at least 26% equity participation in the Indian Joint Venture Company/ Subsidiary Company, which shall be maintained for a lock-in period of seven (7) years from the date of incorporation of such Joint Venture/ Subsidiary or up to the end of defect liability period of the contract, whichever is later.</p> <p>Bidder shall be required to furnish a letter of support from Collaborator / Licensor / Technology provider for successful performance of respective equipment valid for a period of 07 (seven) years or up to the end of defect liability period of the contract whichever is later, as per the format enclosed in the bidding document, at the time of placement of order on the approved sub-vendor.</p>			
4.4	<p>Before taking up the manufacturing of such equipment(s) as per clause 4.2 and 4.3 above, the Bidder / its sub vendor(s) must create (or should have created) manufacturing and testing facilities at its works as per collaborator / licensor's design, manufacturing and quality control system for such equipments duly certified by the collaborator / licensor.</p>			
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<p>4.5</p> <p>4.6</p> <p>5.0</p> <p>i)</p> <p>(a)</p> <p>(b)</p> <p>ii)</p> <p>iii)</p> <p>iv)</p> <p>(a)</p>	<p>Further, the collaborator / licenser shall provide (or should have provided) all design, design calculation, manufacturing drawings and must provide (or should have provided) technical and quality surveillance assistance and supervision during manufacturing, erection, testing, commissioning of equipments.</p> <p>Bidder shall offer and supply only the type of the above equipment(s) for which it, itself or the manufacturer / collaborator(s) / licenser(s) proposed by the Bidder for the above equipment(s) is qualified.</p> <p>The Employer reserves the right to fully satisfy himself regarding capability and capacity of Bidder / its sub-vendor(s) and the proposed arrangement and may prescribe additional requirement before allowing manufacture of the equipment listed above for this contract.</p> <p>Provenness criteria for other equipments/ systems</p> <p>Design & Engineering of Power Cycle Piping:</p> <p>The Bidder / its sub-vendor should have designed, engineered (including static analysis, hanger engineering, stress analysis) power cycle piping systems including at least boiler feed pump suction & discharge, condensate pump suction & discharge, extraction steam piping, heater drains & vents, flash tanks for at least one fossil fuel fired thermal power unit of size 500 MW or above which is in successful operation for at least one (1) year prior to date of techno-commercial bid opening.</p> <p>In case the Bidder / its sub-vendor does not meet the requirements at (a) above in part or full, but he is a regular piping design & engineering firm/agency and currently carrying out the design and engineering activity of power cycle piping systems for fossil fuel fired thermal power unit(s), may also be considered qualified, provided he collaborates/sub-contracts/associates with a design firm/agency, who in turn meets the requirements of clause (a) above, for the purpose of execution of design and engineering of power cycle piping systems for this package. However, in such case, the Bidder/ his sub-vendor shall get the design/engineering documents as per technical specification duly vetted by his collaborator/sub-contractor/associate for the part of design for which he himself is not qualified.</p> <p>Turbine Hall EOT crane</p> <p>The Bidder/ its sub-vendor should have designed, manufactured, erected and commissioned EOT cranes of capacity 100T or more with minimum crane span of 28 meters, which is in successful operation in at least one (1) station for a minimum period of one (1) year.</p> <p>Condenser on-load tube cleaning system (COLTCS)</p> <p>The Bidder/ its sub-vendor should have designed, manufactured, erected and commissioned COLTCS with ball collecting strainer having diameter of not less than 2100 mm, which is in successful operation in at least one (1) station for a minimum period of one (1) year.</p> <p>Condensate Polishing Plant</p> <p>The Bidder/its Sub-vendor should have designed, supplied, erected and commissioned at least one (1) Condensate Polishing Plant of mixed bed, deep bed type consisting of service vessel of minimum capacity of 500 M3/hr. The plant shall have external regeneration system, incorporating the same resin separation and</p>		
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	<p>regeneration process as proposed by the Bidder / its Sub-vendor for this package. The above plant should have been in successful operation for a period of at least one (1) year.</p> <p>(b) The Bidder/its Sub-vendor who do not meet the qualification requirements stipulated at 5.0(iv) (a) above, may also participate provided the Bidder/its Sub-vendor is a Contractor in water treatment plant and has executed at least one (1) number ion exchange based demineralising plant of minimum capacity of 60 Cu.m/hr consisting of maximum two (2) streams and associates for this bid with an Associate who in turn fully meets the requirements stipulated at 5.0(iv) (a) above.</p> <p>v) Air Conditioning System The Bidder/ its sub-vendor should have designed, supplied, erected and commissioned at least one (1) number of Air conditioning system having a total installed capacity of 300TR or more including stand-by chiller unit (if any), which should have included at least one chilling unit with a minimum capacity of 60TR. The system should have been in successful operation for at least one (1) year.</p> <p>In addition, the chiller unit(s) proposed to be supplied for this package shall be sourced from the manufacturer(s) who have manufactured and supplied at least one (1) number of similar type of chiller unit having a capacity of not less than 150 TR, which should have been in successful operation for at least one (1) year.</p> <p>vi) Ventilation System The Bidder/its sub-vendor should have designed, supplied, erected, and commissioned at least one (1) number ventilation system including air washer unit having individual fan capacity of 80,000 Cum./Hr. or more. The system should have been in successful operation for at least one (1) year.</p> <p>vii) Fire Detection and Protection System: Inert gas fire extinguishing system shall be sourced from an agency who has designed and supplied at least one (1) Inert gas total flooding fire extinguishing system having a total risk volume of at-least 1000 Cum. This system must have been designed to the recommendation of Tariff Advisory Committee of India or any other International reputed authority (like LPC-U.K. or NFPA, USA) and should have been in operating condition for a period not less than one (1) year.</p> <p>Further, the analogue addressable type fire alarm system proposed to be supplied shall be sourced from a firm who has supplied at least one (1) similar system which has been approved or listed by UL-USA/ FM-USA/ LPC-UK/ similar agency and should have been in operation for at least one (1) year.</p>		
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6.5.1A.1	<p>The Bidder/Sub-vendor should meet the qualifying requirements of any one of the qualifying routes stipulated under clause 6.5.1A.1 or 6.5.1A.2:</p> <p>ROUTE-1 Bidder/Sub-Vendor should have designed, manufactured and supplied at least two (2) nos. (One each at two different installations) of 400 KV or above class Generator transformers of at least 200 MVA capacity (either three phase transformer as a single unit or single phase transformer) which should be in successful operation for at least two (2) years.</p>		
6.5.1A.2	<p>ROUTE-2 Bidder/Sub-Vendor who have designed, manufactured and supplied at least two (2) no. 220 KV or above class transformer which are in successful operation for two (2) years and have established manufacturing facilities for 400 KV class transformers based on technological support of its associate or collaborator or technology provider or licensor, can also be considered Qualified provided its Associate or Collaborator or Technology provider or Licensor meets the qualifying requirement stipulated at 6.5.1A.1 above, and:-</p> <p>(i) Associate or Collaborator or technology provider or licensor provides a letter of technical support, for successful performance of the transformers, as per format, given in bidding document. This letter of technical support should be submitted prior to the placement of order on approved Sub-Vendor.</p> <p>(ii) Transformer shall be of Collaborator's/Associate's/Technology provider's/Licensor's design. Transformer shall be manufactured in line with manufacturing & assembly drawings of Collaborator/Associate/Technology provider/Licensor.</p> <p>(iii) Core coil assembly and final testing of the transformer shall be under the supervision of Collaborator/Associate/Technology provider/Licensor.</p>		
6.5.2A	<p>SHUNT REACTOR - 400kV (As Applicable)</p>		
6.5.2A.1	<p>Bidder/Sub-Vendor should have designed, manufactured and supplied at least 50 MVAR capacity (either three phase as a single unit or bank of three single phase reactors of at least 16.67 MVAR each) which should have been in successful operation at two (2) different installations for at least two (2) years.</p>		
6.5.2A.2	<p style="text-align: center;">OR</p> <p>Bidder/Sub-Vendor who have designed, manufactured and supplied at least two (2) no. 400 KV or above class transformer / 220 KV or above class reactor which are in successful operation for two (2) years and have established manufacturing facilities for 400 KV class shunt reactors based on technological support of its Associate or Collaborator or Technology provider or Licensor, can also be considered for manufacturing & supply of reactor specified under present package provided:-</p> <p>(i) Associate or Collaborator or Technology provider or Licensor provides a letter of technical support, for successful performance of the reactors, as per format, given in bidding document. This letter of technical support should be submitted prior to the placement of order on approved Sub-Vendor.</p>		
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<p>(ii)</p> <p>(iii)</p> <p>6.5.3A</p> <p>6.6.0</p>	<p>Reactor shall be of Collaborator's/Associate's/Technology provider's/Licensor's design. Reactor shall be manufactured in line with manufacturing & assembly drawings of Collaborator/Associate/Technology provider/Licensor.</p> <p>Core coil assembly and final testing of the reactor shall be under the supervision of Collaborator/Associate/Technology provider/Licensor.</p> <p>EHV & HV POWER TRANSFORMERS</p> <p><u>(Transformer of voltage class above 36 kV to 132 kV and Unit Transformer)</u></p> <p>Bidder/Sub-vendor should have designed, manufactured and supplied at least two (2) numbers (one each at two different installations) of 132 kV or above class transformers of at least 110MVA capacity which should have been in successful operation for at least two years.</p> <p>And</p> <p>Bidder should have its own facilities for conducting all routine and type tests as per IS: 2026 (except short circuit test).</p> <p>And</p> <p>90 MVA, 132 KV or higher rated oil filled transformer manufactured by Bidder should have been successfully short circuit tested.</p> <p><u>Note (applicable for Cl. No. 6.5.1A, 6.5.2A & 6.5.3A):</u></p> <p>Two different installations means two different project sites or two different contracts. Equipment designed by the Bidder/Sub-vendor by itself or through its collaborator/associate/technology provider/licensor for reference plant, shall also be considered meeting the requirement of design.</p> <p>LT SWITCHGEAR</p> <p>ROUTE 1</p> <p>1.1 Bidder/ Sub Vendor should have manufactured and supplied at least a total of four hundred & fifty (450) numbers of draw out type Air Circuit Breaker Panels and / or draw out type Motor Control Centre Panels with fault rating of at least 45kA for one (1) second and 105kA peak under a single order and these panels should have been in successful operation for at least two (2) years.</p> <p style="text-align: center;">And</p> <p>1.2 Bidder/ Sub Vendor should have manufactured and supplied at least one hundred & fifty (150) numbers of Air Circuit Breakers having fault rating of at least 45kA rms BREAKING, 105kA peak MAKING and 45kA withstand for one (1) second, and their associated draw out type Air circuit breaker panels having fault rating of at least 45kA for one (1) second and 105kA peak, which should have been in successful operation for at least two (2) years.</p>		
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	<p>ROUTE 2</p> <p>1.3 Bidder/ Sub Vendor should have manufactured and supplied at least a total of two hundred & twenty five (225) numbers of draw out type Air Circuit Breaker Panels and / or draw out type Motor Control Centre Panels with fault rating of at least 45kA for one (1) second and 105kA peak under a single order and these panels should have been in successful operation for at least two (2) years.</p> <p style="text-align: center;">And</p> <p>1.4 Bidder/ Sub Vendor should have manufactured and supplied at least seventy five (75) numbers of draw out type Air Circuit Breaker panels having fault rating of at least 45kA for one (1) second and 105kA peak, which should have been in successful operation for at least two (2) years.</p> <p style="text-align: center;">And</p> <p>1.5 Bidder/Sub Vendor shall be considered qualified provided its Associate or Collaborator or Technology Provider or Licensor meets the requirement stipulated in Route-1 for sourcing of Air Circuit Breakers. The Associate or Collaborator or Technology Provider or Licensor shall provide a letter of technical support for successful performance of the Air Circuit Breakers, as per the format, given in the bidding document. This letter of technical support should be submitted at the time of placement of order on the Sub Vendor.</p> <p>NOTE: 1. Each Single Front Panel shall be counted as one (1) Panel, Double Front Panel as one (1) Panel and Air Circuit Breaker Panel as one (1) Panel. 2. The provenness criteria shall be applicable for all draw out type and fixed type switchboards except Lighting DBs and Welding DBs.</p> <p>6.7.0 11 kV / 6.6 kV / 3.3 kV SWITCHGEARS</p> <p>1.1 Bidder/ Sub Vendor should have manufactured and supplied at least one hundred (100) numbers of 6.6kV or above Switchgear panels with fault rating of at least 40kA for one (1) second and 100kA peak, which should have been in successful operation for at least two (2) years.</p> <p>1.2 Bidder/ Sub Vendor should have manufactured and supplied at least one hundred (100) numbers of Vacuum Circuit breakers for 6.6kV or above panels with a rating of 40kA rms BREAKING, 100kA peak MAKING and 40kA withstand for one (1) second, which should have been in successful operation in 6.6kV or higher voltage application for at least two (2) years.</p> <p>6.8.0 NUMERICAL RELAYS & NETWORKING</p> <p>1.1 Bidder/ Sub Vendor should have manufactured and supplied and successfully configured at least one hundred (100) numbers of Numerical Relays with IEC 61850 used for application in Feeder Protections/Transformer Protections/Motor protections. These relays should have been in successful operation for at least two (2) years.</p>		
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<p>6.9.0</p> <p>6.10.0</p> <p>6.11.0</p> <p>7.0</p> <p>7.1</p> <p>7.2</p>	<p>1.2 Bidder/ Sub Vendor should have manufactured/ integrated and successfully done Site Acceptance Test (SAT) for a network on IEC 61850 with at least one hundred (100) numbers of Communicable Numerical Relays.</p> <p>DC BATTERIES</p> <p>Bidder/ Sub Vendor should have manufactured and supplied at least two (2) numbers of highest offered rating or above of high discharge type plate positive plate type battery (in case bidder offers Lead Acid plate type battery) or high discharge type Nickel Cadmium battery (in case bidder offers Nickel Cadmium battery), at least one (1) each at two (2) different industrial installations, which should have been in successful operation for at least two (2) years.</p> <p>NOTE: Two different installations mean two different project sites or two different contracts.</p> <p>HT POWER CABLES</p> <p>The bidder/Sub-vendor should have manufactured and supplied following cables:</p> <p>(a) Atleast 50kms of XLPE insulated power cables of 6.35/11 KV or higher voltage grade, executed in one or more orders.</p> <p>(b) At least one (1) Km of flame retardant low smoke cables of any voltage level.</p> <p>DG SETS</p> <p>The bidder/Sub-vendor should have supplied at least two (2) numbers of DG sets of rating not less than 1500 kVA, at least one (1) each at two (2) different installations, which should be in successful operation for at least two (2) years. The offered make of the DG set (Alternator and Engine) shall be same as that of reference plant DG sets.</p> <p>NOTE: Two different installations mean two different project sites or two different contracts.</p> <p>Provenness of C&I Equipments / Systems</p> <p>The Bidder or its proposed sub vendor(s) should meet the provenness requirements of any one of the routes stipulated under clause 7.1 or 7.2. In addition, the Bidder or its sub vendor(s) should also meet the requirements stipulated under clause 7.3, 7.4, 7.5 & 7.6.</p> <p>Route 1 (For Distributed Digital Control, Monitoring and Information System (DDCMIS) Supplier):</p> <p>The DDCMIS supplier(s) of STG integral controls and BOP-C&I-TG should have engineered, supplied, and commissioned/ got commissioned their respective control systems in at least one (1) unit of rating 200MW or above in a power station(s).</p> <p>Route 2 (For DDCMIS Supplier with Collaborator(s)/Associates(s)):</p> <p>The DDCMIS supplier for this package who fully meets the requirement for BOP-C&I-TG at clause no. 7.1 but does not meet the requirement for STG integral</p>		
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7.3 7.4 7.5 7.6	<p>controls, may also supply DDCMIS for STG integral controls, provided it collaborates/associates with DDCMIS/DCS supplier who fully meets the requirement for STG integral controls stipulated at clause no. 7.1.</p> <p>The Control system(s) offered for BOP-C&I-TG and STG integral controls application(s) shall be same or of same series as that of the control system(s) for respective applications which has been commissioned in at least one (1) unit of rating 200MW or above in a power station(s) .</p> <p>The Control system(s) offered at clause no. 7.3 shall be operating successfully for BOP-C&I-TG or STG integral controls application(s) for a period of not less than one (1) year in at least one (1) unit of rating 200MW or above in a power station(s).</p> <p>For assembly, testing and commissioning of DDCMIS, the DDCMIS supplier of BOP-C&I-TG or its respective group company should have one or more works in India where from at least one DDCMIS has been engineered, assembled , tested and supplied for one unit of rating 200MW or above in a power station.</p> <p>The other C&I systems offered for this package shall meet the following.</p> <p>a) SWAS and Vibration Monitoring system offered for this package shall be same or of same series which should have been in successful operation for a period of not less than one(1) year in at least one(1) unit of rating 200MW or above in a power station.</p> <p>b) 24 V DC modular charger offered for this package shall be same or of same series and type as that of 500A or above capacity 24 V DC modular charger which should have been in successful operation for a period of not less than one(1) year in any industry or telecommunication application.</p> <table border="1" data-bbox="400 1249 1445 1624"> <thead> <tr> <th colspan="2" data-bbox="400 1249 1445 1312">Notes:-</th> </tr> </thead> <tbody> <tr> <td data-bbox="400 1312 475 1624">(A)</td> <td data-bbox="475 1312 1445 1624"> Control system for BOP-C&I-TG and STG integral controls application(s) referred in Para 7.1, 7.2, 7.3, 7.4 and 7.5 means following :- <ul style="list-style-type: none"> (i) Control system for BOP-C&I-TG shall include Modulating control for feed water / Condensate Cycle and Binary Control of the auxiliaries for Turbine generator (TG) for coal fired units. (ii) Control system for STG integral controls shall include Steam Turbine Electro-hydraulic control & Turbine Protection system. </td> </tr> </tbody> </table>	Notes:-		(A)	Control system for BOP-C&I-TG and STG integral controls application(s) referred in Para 7.1, 7.2, 7.3, 7.4 and 7.5 means following :- <ul style="list-style-type: none"> (i) Control system for BOP-C&I-TG shall include Modulating control for feed water / Condensate Cycle and Binary Control of the auxiliaries for Turbine generator (TG) for coal fired units. (ii) Control system for STG integral controls shall include Steam Turbine Electro-hydraulic control & Turbine Protection system.
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<p>8.0</p> <p>8.1</p> <p>8.2</p> <p>8.3</p> <p>8.4</p> <p>8.5</p> <p>9.0</p> <p>9.1</p> <p>9.2</p>	<p>PROVENNESS CRITERIA FOR CIVIL AND STRUCTURAL WORKS</p> <p>Bidder or its agency should have in past executed civil and structural works of 500 MW or higher capacity coal based/Lignite based power plant including piling, Main power house building and Foundation for Turbo-generator.</p> <p>Bidder can engage more than one agency, in case the Bidder itself is not able to meet the requirement at 8.1. The agency being engaged for a particular work should have in the past executed such works of 500 MW or higher capacity plant.</p> <p>In case Bidder or its agency do not meet the requirements at 8.1 and the Bidder proposes to engage agency (ies) for civil & structural works on work volume basis, Bidder or its agency (ies) should have executed such works in the past and the annual rate of execution in the reference works should not be less than eighty percent (80%) of the asking rate of such works, (structural steel fabrication & erection and RCC) for which it is being engaged.</p> <p>Successful Bidder shall finalize the agency (ies) for each work in consultation with Engineer-in-charge at site before engaging them.</p> <p>a) Bidder or its design agency (ies) should have carried out the design and detailed engineering of Main plant building of coal based/Lignite based power plant of 500 MW or higher capacity.</p> <p>b) For Foundation for Turbo-generator, Bidder or its design agency should have carried out design & detailed engineering of at least one foundation for Turbo-generator (with or without Vibration Isolation system as offered by the Bidder).</p> <p>The design agency (ies) proposed by the Bidder shall be subject to Employer's approval.</p> <p>Proveness criteria for Solar PV rooftop on plant buildings:</p> <p>Solar PV rooftop EPC contractor:</p> <p>The bidder/Sub-contractor should have designed, supplied, erected/supervised erection and commissioned/supervised commissioning of SPV based grid connected power plant of at least one plant of 100 kWp or above and cumulative capacity of 500 kWp or above. The reference plant of 100 kWp or above capacity must have been in successful operation for at least six months.</p> <p>Solar PV module</p> <p>The bidder/sub-contractor shall meet the requirements as stipulated in para (a) and (b) below for supply of solar PV modules:</p> <p>a) The Bidder / sub-contractor should have manufactured and supplied the solar PV modules of cumulative installed capacity of 1MWp or above using any</p>		
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<p>10.0</p> <p>11.0</p> <p>12.0</p>	<p>rating of modules and any source of indigenous or imported PV cells in any one financial year.</p> <p>b) The Bidder / sub-contractor should have manufactured and supplied solar PV modules built up using indigenous and/or imported PV cells of power rating 240 Wp or above which must have been in successful operation for at least six months.</p> <p>Balance equipments/ systems</p> <p>The Bidder at its option can source the balance of plant equipment/systems not covered in clause 4.0 & 5.0 above. However for such balance of plant equipment/systems, the Employer reserves the rights to satisfy himself on the provenness of the equipment and capability and capacity of the manufacturers.</p> <p>Notwithstanding anything stated above, the Employer reserves the right to assess the capabilities and capacity of the Bidder/his collaborators/ licenser/ his sub-contractors to perform the contract, should the circumstances warrant such assessment in the overall interest of the Employer.</p> <p>To enable the approval of sub-vendors, the Bidder shall provide all necessary data such as type, design, make, capacity, duty conditions, date of commissioning/ operation etc.</p>		
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