

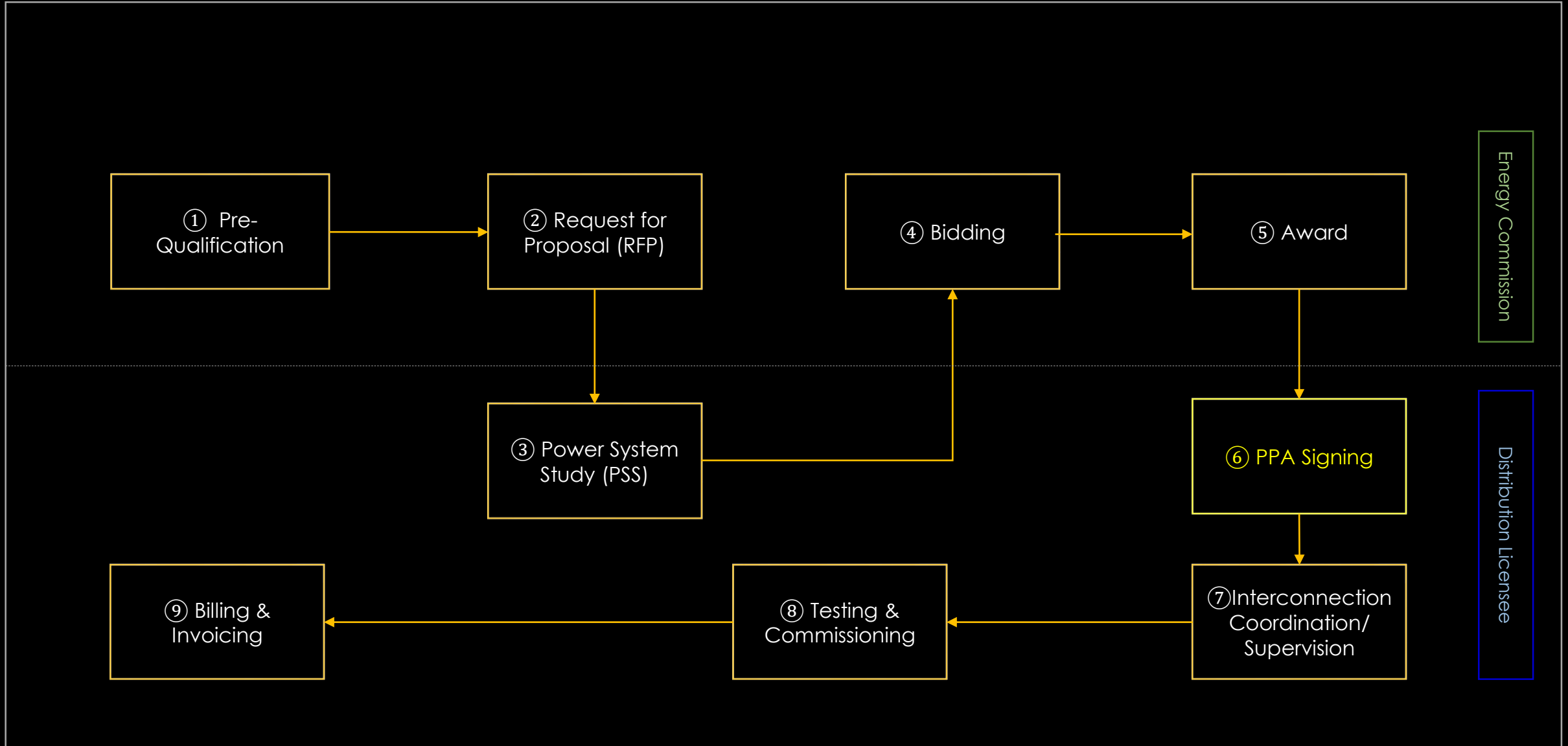
Request for Proposal

# Head of Terms for Large Scale Solar PPA for MW Connection

Sansubari Che Mud

General Manager (Sustainable Energy Development), Tenaga Nasional Berhad

# Large Scale Solar Overall Process Overview



# Large Scale Solar PPA (MV connection) Head of Terms

## The SCOPE

#	Salient Point	Terms of the PPA
1	Established Capacity and Connection	<ul style="list-style-type: none"><li>• Between 1 to 30 MW<sub>AC</sub> at Interconnection Point (IP)</li><li>• Connection at Distribution network &lt;66kV, at suggested node points as per TNB guidelines</li></ul>
2	Facility Type and Output	<ul style="list-style-type: none"><li>• Output in MW<sub>AC</sub>.</li><li>• Energy from Solar PV only</li></ul>
3	Eligibility	<ul style="list-style-type: none"><li>• Open to all</li></ul>
4	Term of PPA	<ul style="list-style-type: none"><li>• 21 years.</li></ul>
5	Commercial Operation Date (COD)	<ul style="list-style-type: none"><li>• Single COD when full contracted capacity can be achieved, i.e. single COD and not in increments.</li></ul>
6	Type of Concession	<ul style="list-style-type: none"><li>• Build, Own, and Operate (BOO) by the IPP.</li></ul>

# Large Scale Solar PPA (MV connection) Head of Terms

## The Conditions Precedent (Clause 3)

#	Salient Point	Terms of the PPA
7	Sites for facility and Interconnection Facility (IF)	<ul style="list-style-type: none"><li>• Site for facility is land or rooftop.</li><li>• Additional CPs for sites, to effectiveness under the PPA<ul style="list-style-type: none"><li>◦ Proof ownership/lease – all CPs under the Agreement has been met / Agreement effective and is adequate to cover the term of the PPA.</li></ul></li><li>• Event of default:<ul style="list-style-type: none"><li>◦ In the event that the site Agreement is terminated, the PPA is also terminated.</li></ul></li></ul>
8	PSS	<ul style="list-style-type: none"><li>• PSS follow Malaysian Distribution Code (MDC) Standard.</li><li>• PSS report validity for 1 cycle of bidding process. No extension of PSS report/ duplication/sharing is allowed</li><li>• In the RFP, it must be specifically stated that:<ul style="list-style-type: none"><li>◦ PSS to be conducted by DL</li><li>◦ PSS fees applicable according to capacity</li></ul></li></ul>
9	Nodal Points	<ul style="list-style-type: none"><li>• The connection will be based on maximum allowable/available capacity at each nodes</li></ul>

# Large Scale Solar PPA (MV connection) Head of Terms

## The Commercial Structure (Clause 4 and 5)

#	Salient Point	Terms of the PPA
10	Test Energy	<ul style="list-style-type: none"><li>• 'Zero rated' or Free energy to DL as there is no fuel cost involved</li></ul>
11	Energy Payment	<ul style="list-style-type: none"><li>• Take and pay for billing cycle period.</li><li>• Energy payment only.</li></ul>
12	Maximum Annual Allowable Quantity (MAAQ)	<ul style="list-style-type: none"><li>• Proposed by the bidders based on the capacity of the Plant</li></ul>
13	Energy Rate	<ul style="list-style-type: none"><li>• Energy delivered up to MAAQ paid at Energy Rate</li><li>• Energy delivered beyond MAAQ paid at the Excess Energy Rate, 1sen/kWh.</li></ul>
14	Energy beyond Contracted Capacity	<ul style="list-style-type: none"><li>• Commercial<ul style="list-style-type: none"><li>○ Contracted capacity will be dependent on bid submitted</li><li>○ Any energy produced on a half hourly basis beyond Contracted Capacity will be free</li></ul></li><li>• Technical<ul style="list-style-type: none"><li>○ IPP to install necessary equipment to cap output to Contracted Capacity. Follows Grid Code requirement for security.</li><li>○ Cost borne by IPP.</li></ul></li></ul>

# Large Scale Solar PPA (MV connection) Head of Terms

## The Commercial Structure (Clause 4 and 5)

#	Salient Point	Terms of the PPA
15	Exceptions to obligation to accept Net Energy Output (NEO)	<ul style="list-style-type: none"> <li>TNB's obligation to accept energy is excused in the following condition:               <ol style="list-style-type: none"> <li>NEO exceeds MAAQ,</li> <li>Energy delivered instantaneously exceeds Contracted Capacity,</li> <li>Energy delivered does not conform with technical specifications under the PPA,</li> <li>Energy delivered not solely driven by Solar PV technology,</li> <li>System constraints,</li> <li>Emergency Condition of Grid, or</li> <li>Maintenance of TNB Metering Equipment or the Grid System.</li> </ol> </li> </ul>
16	Suspension of IPP Sale Obligation	<ul style="list-style-type: none"> <li>Emergency Condition on IPPs' facilities.</li> </ul>
17	Payment for Non-Acceptance of Net Energy Output NEO (Deemed Energy)	<ul style="list-style-type: none"> <li>IPP shall be paid the Non-Acceptance Payment for any reasons other than Item 15 above which is due to TNB.</li> <li>Paid at Energy Rate.</li> <li>TNB must quantify Equivalent Net Energy Output</li> </ul>
18	Consequences of Non-Delivery	<ul style="list-style-type: none"> <li>If Total NEO is less than [70%] of Declared Annual Quantity (DAQ), then IPP shall reimburse TNB for energy Shortfall</li> <li>Paid at Displaced Cost</li> </ul>

# Large Scale Solar PPA (MV connection) Head of Terms

## The Commercial Structure (Clause 4 and 5)

#	Salient Point	Terms of the PPA
19	Back-up Electricity Supply	<ul style="list-style-type: none"><li>• Upon IPP's request, TNB shall provide the Facility with a supply of back-up electricity</li><li>• Paid at electricity tariff determined by TNB.</li><li>• Import Energy Rate must be higher than Energy Rate to de-incentivise rerouting of Grid supply</li><li>• Similar Import Energy Rate will be applicable for all LSS</li><li>• IPP must have their own backup supply, separate from the Grid for their auxiliary system.</li></ul>
20	Additional Benefits	<ul style="list-style-type: none"><li>• Parties agree that the rights to Carbon Credits belongs to TNB</li></ul>

# Large Scale Solar PPA (MV connection) Head of Terms

## Delay Compensation (Clause 6)

#	Salient Point	Terms of the PPA
21	Delay in achieving Commercial Operation Date (COD)	<ul style="list-style-type: none"><li>• Penalty RM [1,000] per day, for each day of delay up to<ul style="list-style-type: none"><li>• New COD;</li><li>• PPA Termination by TNB; or</li><li>• 180 days after COD, whereby PPA will be terminated.</li></ul></li></ul>
22	Abandonment of Project	<ul style="list-style-type: none"><li>• IPP shall pay TNB an agreed amount for delay compensation.</li></ul>
23	Security	<ul style="list-style-type: none"><li>• Provide bank guarantee not later than the earlier of 7 days from financial closing date, and 210 days after the Effective Date.</li></ul>
24	Taxes and fines	<ul style="list-style-type: none"><li>• Each party shall pay all present and future taxes(national, state or local) to assure performance of the plant</li></ul>



# Large Scale Solar PPA (MV connection) Head of Terms

## Facility, Interconnection Facilities And Metering (Clause 7)

#	Salient Point	Terms of the PPA
25	Facility and Interconnection Facilities (IF)	<ul style="list-style-type: none"><li>• The facility, interconnection facility (IF) and the transmission line from the IF to the Nodal Point is to be designed, built, owned, operated and maintained by the LSS developer.</li><li>• The LSS developer is fully responsible for the land acquisition and obtaining necessary permits, for its cable line route</li><li>• All costs associated to (deep and shallow) connection shall be borne by LSS developer.</li></ul>
26	Modification of Facilities	<ul style="list-style-type: none"><li>• Requires ST's approval for any change/reconfiguration, addition or relocation of facilities other than the submission during bidding.</li></ul>
27	Meteorological Monitoring Facilities (MMF) and Pyranometer	<ul style="list-style-type: none"><li>• IPP shall install Meteorological Measuring Facilities (MMF) and pyranometer at the site.</li><li>• IPP shall submit the conceptual design report to TNB</li><li>• LSS must maintain historical data of readings for throughout the term.</li></ul>
28	Telemetry/ SCADA	<ul style="list-style-type: none"><li>• LSS must have telemetry to RCC<ul style="list-style-type: none"><li>◦ SCADA and Energy Meter</li></ul></li></ul>

# Large Scale Solar PPA (MV connection) Head of Terms

## Operational & Scheduling Requirement (Clause 8.2)

#	Salient Point	Terms of the PPA
29	Declared Monthly Quantity (DMQ)	<ul style="list-style-type: none"><li>• No later 25<sup>th</sup> day of the month throughout the PPA term, IPP shall update and redeclare the energy expected for the next calendar month</li><li>• IPP shall provide TNB with at least seven (7) days' prior notice for any proposed change to any planned outages.</li></ul>
30	Declared Annual Quantity	<ul style="list-style-type: none"><li>• IPP must declare DAQ (MWh):<ul style="list-style-type: none"><li>○ 60 days prior to COD for first Contract year in monthly tranches; and</li><li>○ 60 days prior to 1<sup>st</sup> January of each Contract year.</li></ul></li></ul>

# Large Scale Solar PPA (MV connection) Head of Terms

## Default And Termination (Clause 15)

#	Salient Point	Terms of the PPA
31	Events of Default	<ul style="list-style-type: none"><li>• IPP's Events of Default<ul style="list-style-type: none"><li>○ Illegal activities on facility site even at non-lease area,</li><li>○ Failure to meet COD within 180 days,</li><li>○ IPP abandons project,</li><li>○ IPP license is suspended or revoked,</li><li>○ Fails to comply with obligations under the PPA</li><li>○ IPP fails to make payment due,</li><li>○ Liquidation of IPP, bankruptcy, etc.</li></ul></li><li>• TNB's Events of Default<ul style="list-style-type: none"><li>○ TNB fails to make payment due,</li><li>○ TNB fails to comply with obligations under the PPA,</li><li>○ Liquidation of TNB, bankruptcy, etc.</li></ul></li></ul>
32	Termination	<ul style="list-style-type: none"><li>• Termination events:<ul style="list-style-type: none"><li>○ Breach of the PPA,</li><li>○ Event of Default if not cured within 90 days. Cure period for certain Events of Default can be extended another 180 days.</li><li>○ FME if not cured within 180 days. Cure period can be extended another 180 days.</li></ul></li></ul>

# Large Scale Solar PPA (MV connection) Head of Terms

## Default And Termination (Clause 15)

#	Salient Point	Terms of the PPA
33	Consequences of Termination	<ul style="list-style-type: none"><li>• If termination is due to default by IPP:<ul style="list-style-type: none"><li>◦ TNB shall have the option but not obligation to purchase the Project</li></ul></li><li>• If termination is due to default by TNB:<ul style="list-style-type: none"><li>◦ IPP shall have the option but not obligation to sell the Project to TNB</li></ul></li><li>• Parties to consider an alternative in the event that TNB cannot purchase the Project. E.g. If TNB cannot purchase the project, then TNB purchases the solar panels at market price for the specific technology taking into account degradation.</li><li>• Pursuant to purchase, IPP must transfer Project to TNB.</li></ul>

## Technical Specifications

#	Salient Point	Terms of the PPA
34	Grid Code Compliance	<ul style="list-style-type: none"><li>• IPP must comply with any future amendments to be made to the Distribution Code, particularly in respect to LSS.</li></ul>

# Large Scale Solar PPA (MV connection) Head of Terms Boiler Plate Clauses

#	Salient Point	Terms of the PPA
35	Change in Law	<ul style="list-style-type: none"><li>• For <math>1 &lt; x \leq 30</math> MW, a threshold of RM 250k incurred due to Change in Law will be borne by IPP.</li><li>• LSS developer must get written approval from Authority</li></ul>
36	Boiler Plate	<ul style="list-style-type: none"><li>• Similar to standard PPA. Including but not limited to:<ul style="list-style-type: none"><li>○ Dispute Resolution &amp; Arbitration</li><li>○ Indemnity</li><li>○ Step-in-Rights</li><li>○ Transfers and Assignments, etc.</li></ul></li></ul>

# Thanks

