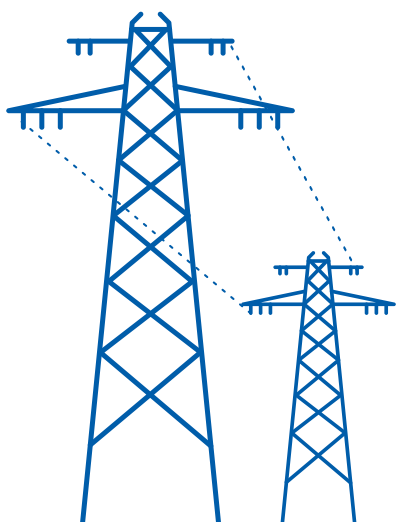




CONNECTION CHARGE BOOK

TABLE OF CONTENTS



1	DEFINITION	Pg. 3-4
2	GENERAL INFORMATION	Pg. 5-6
3	CONNECTION CHARGE FOR CONSUMER	Pg. 7-11
3.1	Low Voltage Category Consumers	Pg. 8
3.2	Medium Voltage Category Consumers	Pg. 9
3.3	High Voltage Category Consumers	Pg. 10
4	DETAIL CHARGES	Pg. 12-20
4.1	Pre Supply Charges	Pg. 13
4.2	Post Supply Charges	Pg. 15
5	CONNECTION CHARGES FOR OTHER CONSUMER CATEGORY	Pg. 21-26
5.1	Temporary Supply	Pg. 22
5.2	Public/Individual Lighting	Pg. 23
5.3	Co-Generator	Pg. 24
5.4	Public Distribution Licensee	Pg. 25
5.5	Traction	Pg. 25
5.6	Infrastructure Area Development	Pg. 26
6	OTHER CHARGES	Pg. 27-28
6.1	Reconnection Fee	Pg. 28
6.2	Administration Fee	Pg. 28
6.3	Surcharge For Instalment	Pg. 28
7	LAND AND BUILDING FOR SUBSTATION	Pg. 29-30
8	LIST OF TABLES	Pg. 31-48



1.0 DEFINITION

“PROJECT MINIMUM MONTHLY CHARGE (PMMC)”

refers to a monthly charge equivalent to 2% of the net capital cost of the supply project. PMMC is effective for 5 years starting from the commencement of supply.

“TEMPORARY SUPPLY”

refers to the electricity supply required for premises with temporary installations or infrastructure and/or for a specific period of time.

“NEAREST SUPPLY”

refers to the nearest available source of supply that can meet the Maximum Demand requested by the Consumer.

“CONNECTION CHARGE”

refers to an upfront payment made by consumer who require an electricity supply from TNB.

“CONNECTED LOAD CHARGE”

refers to the penalty imposed on Medium Voltage and High Voltage consumer when the declared Maximum Demand is not achieved, i.e. when the recorded Maximum Demand is lower than the Reference Maximum Demand (RMD). The Connected Load Charge is applicable for six (6) years for new consumers and five (5) years for consumers requesting additional supply.

“INSTALLED CAPACITY”

refers to installed capacity from the highest voltage infrastructure provided by TNB.

“MAXIMUM DEMAND”

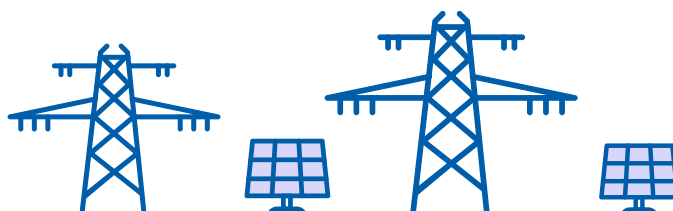
refers to the Maximum Demand as recorded by the meter installed at the consumer's premises, whereby the consumer is billed monthly for the electricity used.

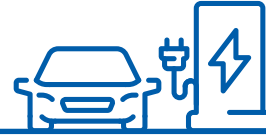
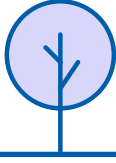
“DEVELOPER”

refers to a party responsible for constructing and/or developing a specific identified area.

“INFRASTRUCTURE AREA DEVELOPMENT”

refers to the provision of electrical installation infrastructure in newly developed areas (greenfield).





“PUBLIC DISTRIBUTION LICENSEE”

refers to the consumer holding a Public Distribution License from the Energy Commission to distribute electricity within its licensee area and specified capacity as approved in the license, by taking electricity in bulk from TNB.

“CONSUMER”

refers to a person who is supplied with electricity or whose premises are currently being connected for the purpose of supply of electricity by the Supply Authority or a Licensee.

“CO-GENERATOR”

refers to the consumer who obtains a license from the Energy Commission to generate electricity for their own use. Co-generator consumer also require electricity supply from TNB as a standby supply in the event of maintenance or interruptions in the consumer's cogeneration system.

“PREMIUM”

refers to an additional charge imposed on consumers to cover extra expenses incurred by TNB.

“LOW-COST HOUSE”

refers to a house defined by the Government or any other government agency (including state government) as low-cost, not dependent on market pricing.

“DATE OF SUPPLY CONNECTED”

refers to the date when the supply is ready to be connected to the consumer, specifically referred to meter installation date.

“EXTRA LOW VOLTAGE”

refers to a voltage exceeding 1 volt but less than or equal to 50 volts.

“LOW VOLTAGE”

refers to voltage exceeding 50 volts but less than or equal to 1,000 volts.

“MEDIUM VOLTAGE”

refers to voltage that exceeding 1,000 volts but less than or equal to 50,000 volts.

“HIGH VOLTAGE”

refers to voltage exceeding 50,000 volts but less than or equal to 230,000 volts.

“EXTRA HIGH VOLTAGE”

refers to voltage exceeding 230,000 volts.

2.0 GENERAL INFORMATION

2.1 This book explains the terms and conditions for consumers/developers who require an electricity supply connection from Tenaga Nasional Berhad (TNB).

2.2 Terms and conditions in this book has been approved by the Energy Commission for implementation starting from 15 January 2021 and is subject to amendments and changes as approved by the Government from time to time.



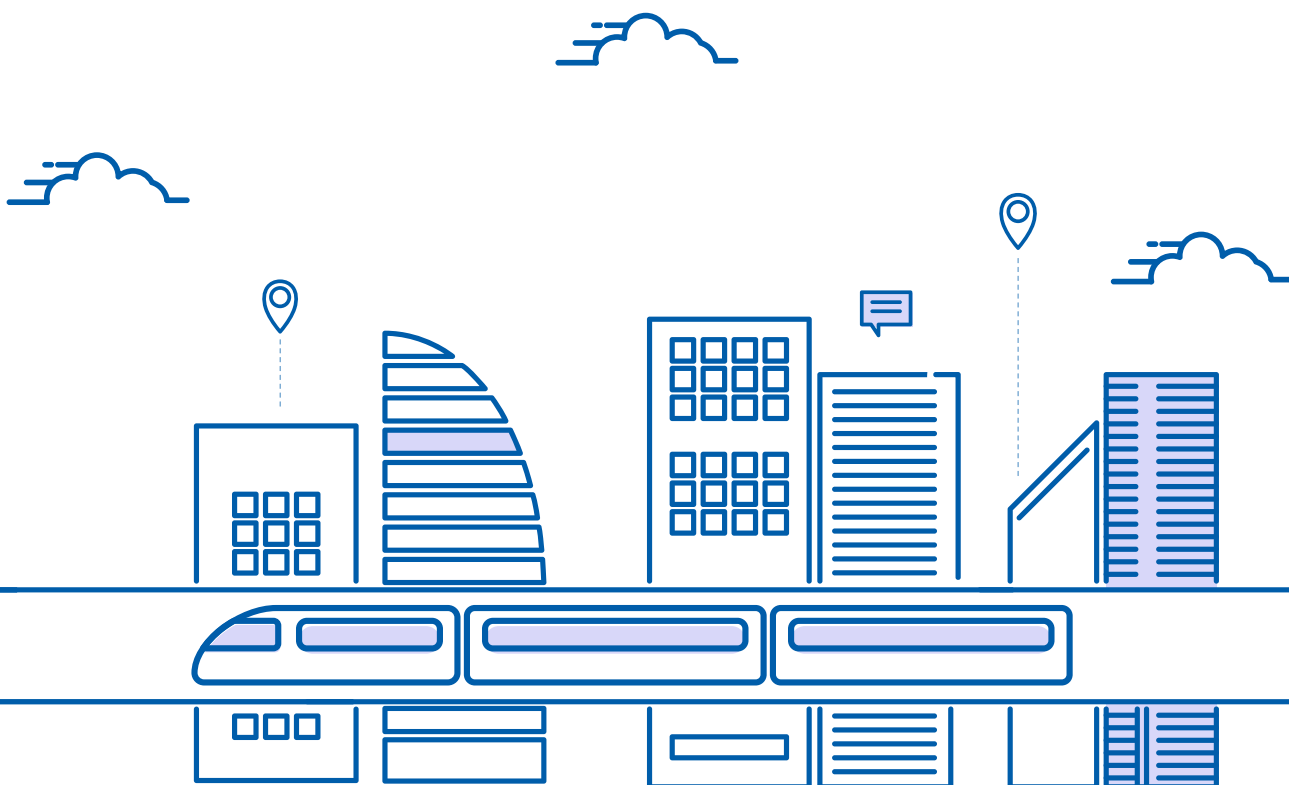
2.3 The classification of voltage level for determination of the Connection Charge (CC) are as follows:

Category of Consumer/ Developer	Extra Low Voltage	Low Voltage	Medium Voltage	High Voltage	Extra High Voltage
Voltage Level	1V < V ≤ 50V	50V < V ≤ 1kV • 230V • 400V	1kV < V ≤ 50kV • 6.6kV • 11kV • 22kV • 33v	50kV < V ≤ 230kV • 132kV	V > 230kV • 275kV
CC Components	• Load charges based on the declared Maximum Demand (MD). • Additional cable charges for cable laying exceeding 6km from the nearest supply, if applicable.			• 1st Principle Method	
	• Charges for special requests from consumer and/or third-party requirements beyond TNB's standard, if applicable (e.g., Local Authorities, Government Agencies, etc.).				

Table (a): Connection charge based on voltage level

- The classification of voltage levels for the purpose of CC is based on three categories, Low Voltage (including Extra Low Voltage), Medium Voltage, and High Voltage (including Extra High Voltage).
- The voltage level depends on the MD declared by the consumer/developer, subject to TNB's approval in accordance with the guidelines outlined in the Electricity Supply Application Handbook (ESAH).





2.4 The determination of CC for other type of applications as follows:

Type of Application	CC Principle
a. Temporary Supply b. Public/Individual Lighting c. Co-Generator d. Public Distribution Licensee e. Traction	Full* project cost

Table (b): Connection charged based on type of application

**if the supply scheme is 'fully dedicated'. Otherwise, consumer/developer will be charged using a apportionment method based on the declared Maximum Demand, relative to the capacity of the infrastructure installed by TNB.*

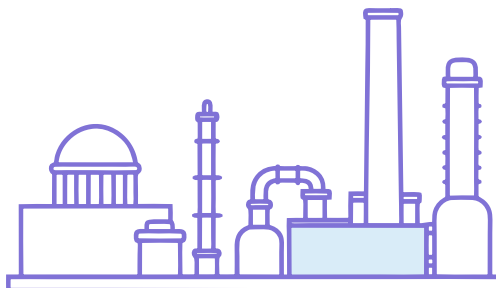


3.0

CONNECTION CHARGE FOR CONSUMER



3.0 CONNECTION CHARGE FOR CONSUMER



3.1 LOW VOLTAGE CATEGORY CONSUMERS

a. The **Connection Charges** for Low Voltage consumer are as follows:

No.	Component	Description	Charge Rate
i.	Load Charges	Charges imposed based on the declared Maximum Demand (kW)	Refer to Table 1
ii.	Additional Cable Charges	Charges imposed for supply connections exceeding 6km from the source of supply (if applicable)	Refer to Table 2
iii.	Special Request From Consumer and/or Third Party Requirement Charges	Charges imposed for job scopes beyond TNB specifications, where applicable, involving: i. Special requests from consumers; and/or ii. Requirements from third parties such as Local Authorities, Government Agencies or others	Refer to Table 3

Table (c): Connection Charges for Low Voltage Consumer



3.2 MEDIUM VOLTAGE CATEGORY CONSUMERS

a. Connection Charges for Medium Voltage consumer are as follows:

No.	Component	Description	Charge Rate
i.	Load Charges	Charges imposed based on the declared Maximum Demand (kW)	RM 45/kW
ii.	Additional Cable Charges	Charges imposed for supply connections exceeding 6km from the source of supply (if applicable)	Refer to Table 2
iii.	Special Request From Consumer and/or Third Party Requirement Charges	Charges imposed for job scopes beyond TNB specifications, where applicable, involving: i. Special requests from consumers; and/or ii. Requirements from third parties such as Local Authorities, Government Agencies or others	Refer to Table 3

Note: Consumers applying for Medium Voltage supply are also subject to the terms under Substation Land and Building (Section 7).

Table (d): Connection Charges for Medium Voltage consumer

b. Post-supply charges for Medium Voltage consumers

No.	Component	Description	Charge Rate
i.	Connected Load Charge (CLC)	Charges imposed for any shortfall in the recorded Maximum Demand (MD) compared to the Reference MD, which is determined based on the MD declared by the consumer. CLC will be effective for 6 years for new consumers and 5 years for existing consumers applying for additional supply	Refer to Table 5
ii.	Liquidated Damages	Charges imposed to the consumers who fail to take supply or terminate supply within 5 years period	Refer to Table 6

Table (e): Post-supply charges for Medium Voltage consumers

3.3 HIGH VOLTAGE CATEGORY CONSUMERS

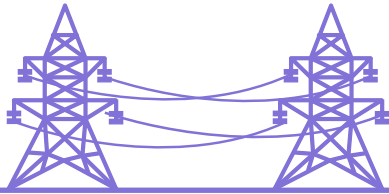
a. **Connection Charges** for High Voltage consumer are as follows:

No.	Component	Description	Charge Rate
i.	Load Charges	The charges imposed based on 1 st Principle method, whereby the consumer is required to cover the difference between the total cost and the return on TNB's infrastructure investment, with a revenue from electricity sales to the consumer over a 15 years period (if applicable)	Refer to Table 7
ii.	Special Request From Consumer and/or Third Party Requirement Charges	Charges imposed for job scopes beyond TNB specifications, where applicable, involving: i. Special requests from consumers; and/or ii. Requirements from third parties such as Local Authorities, Government Agencies or others	Refer to Table 3
iii.	Premium for Fast Track Project	Charges imposed on consumers requesting Fast Track supply within 2 years. This charge is calculated as a percentage of the total project cost, depending on the requested duration of the Fast Track supply	Refer to Table 8
iv.	Liquidated Delay Damages (LDD) for Fast Track Projects	Charges imposed to consumer or TNB if there is a delay in the taking or delivery supply for project implemented via Fast Track	Refer to Table 9

Note: Consumers applying for High Voltage supply are also subject to the terms under Substation Land and Building (Section 7).

Table (f): Connection Charges for High Voltage Consumer





b. Post-supply charges for High Voltage consumers

No.	Charge Component	Description	Charge Rate
i.	Project Minimum Monthly Charge (PMMC)	Charges imposed to ensure capital invested in supplying the consumer gives the minimum revenue return required monthly. The PMMC is based on two percent (2%) of the Net Capital Cost and effective for 5 years from the commencement of supply	Refer to Table 10
ii.	Connected Load Charge (CLC)	Charges imposed for any shortfall in the recorded Maximum Demand (MD) compared to the Reference MD, which is determined based on the MD declared by the consumer. CLC remains in effect for 6 years for new consumers and 5 years for existing consumers applying for additional supply	Refer to Table 5
iii.	Liquidated Damages	Charges imposed to the consumers who fail to take supply or terminate supply within 5 years period	Refer to Table 6

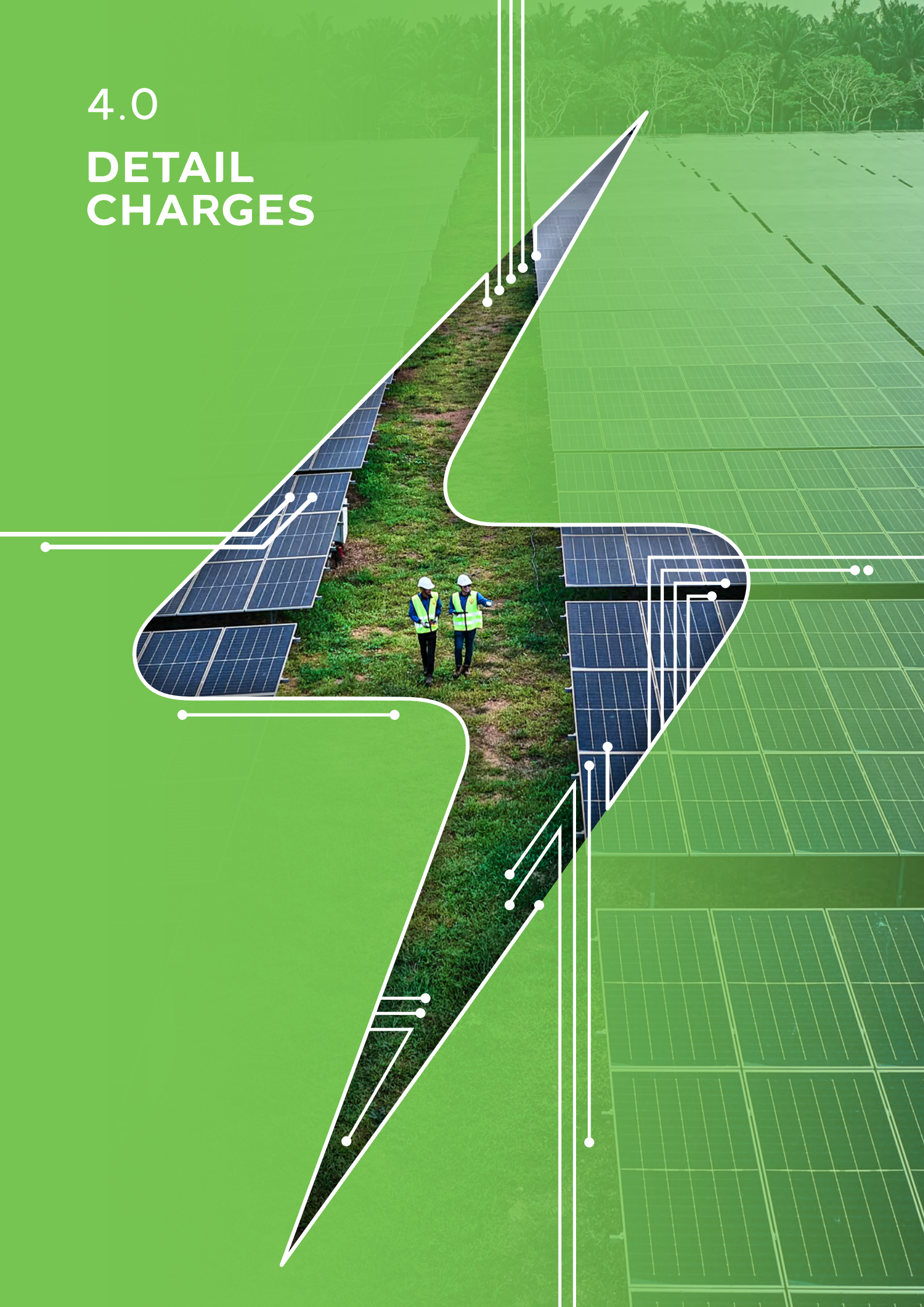
Table (g): Post-supply charges for High Voltage consumers

Please refer to Section 4.0 for further details on pre and post-supply charges for Low Voltage, Medium Voltage, and High Voltage consumers.



4.0

DETAIL CHARGES



4.0 DETAIL CHARGES

4.1 PRE SUPPLY CHARGES

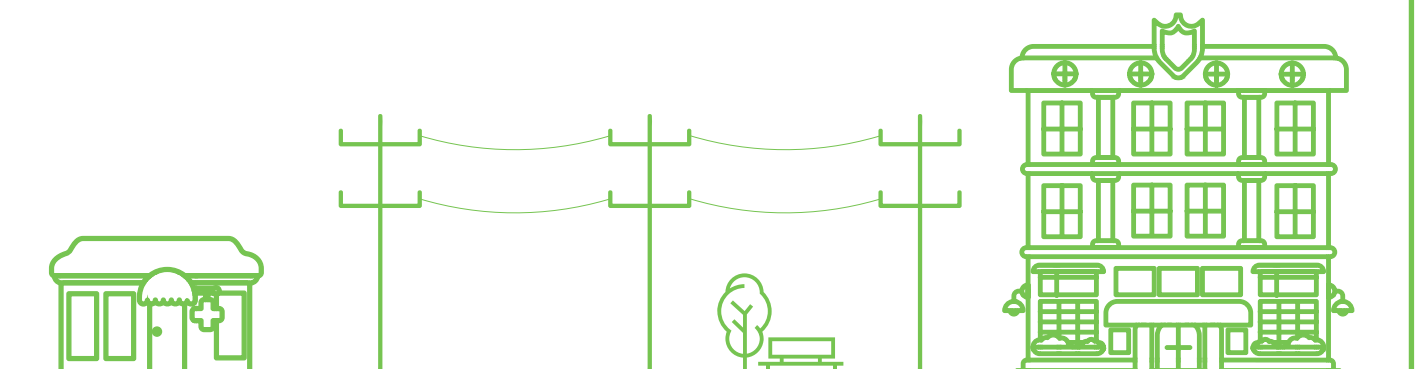
a. LOAD CHARGE

- i. **For Low Voltage consumer**, the load charge rates as specified in **Table 1** are imposed based on the declared Maximum Demand (MD), consumer type and supply connection scheme apply by the consumer.
- ii. **For Medium Voltage consumer**, the load charge rate is based on RM45/kW of the declared MD.
- iii. **For additional supply application (supply upgrade)**, consumer is required to pay the difference between the new load charge and the existing load charge.



b. ADDITIONAL CABLE CHARGES

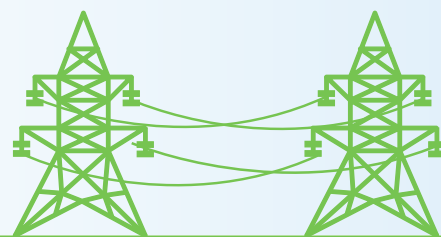
For supply connections exceeding 6km from the existing source, consumer is required to pay additional cable charge on top of the load charge. This charge apply only to the portion of the supply cable to meet the requested load. The cable charge rates are as stated in **Table 2**.



c. SPECIAL REQUEST FROM CONSUMER AND/OR THIRD PARTY REQUIREMENT CHARGES

- i. For any special requests by consumers or requirements imposed by third parties such as Local Authorities or Government Agencies that involve work beyond TNB's standard specifications, the consumer/developer is required to bear the full cost of the said scope of work.

- ii. Standard specifications refer to the specifications or designs of the electricity supply infrastructure system that align with TNB's current guidelines and practices.



- iii. In principle, charges for special requests by consumer or third-party requirements will be determine as follows:

- **Based on the full project cost**, for example, Local Authority requirements for cable laying work using the Horizontal Direct Drilling (HDD) method.
- **Based on the cost difference between the special scheme and the standard scheme**, for example, applications for a supply scheme using fully underground cables.

- iv. For special requests by consumers/developers for additional 11kV feeder and single-phase underground service cables, the applicable charge rates are as specified in **Table 3**.



- Examples comparing consumer special requests and third-party requirements to TNB's standard specifications are provided in **Table 4**.

4.2 POST SUPPLY CHARGES

a. CONNECTED LOAD CHARGE

- i. The Connected Load Charge (CLC) applies only to consumers who require supply at **Medium Voltage** or **High Voltage** level.
- ii. The CLC is a penalty imposed if the recorded Maximum Demand (MD) is lower than the Reference MD CLC that must be achieved. The CLC is to prevent consumers from over declaring load requirement compared to the actual load demand for the development. Over declaration will lead to wastage of generation capacity and increased costs will be borne by all consumers.
- iii. The MD used for CLC calculation is the highest MD recorded and charged in the monthly billing according to the consumer's tariff category.
- iv. A surcharge of RM 8.50/kW is applied for every kW shortfall compared to the Reference MD CLC that must be achieved.
- v. Consumers are required to declare the Final MD and Staggered MD during the initial supply application and meter installation request. The definitions and purposes of these MDs are as follows:

Maximum Demand	Definition	Purpose of Declaration
Final MD	Final MD declared for the total load requirement to establish TNB's supply infrastructure	i. Determining the total connection charges ii. Determining the Reference MD for the last 2 years of CLC
Staggered MD	Staggered MD declared based on the consumer's load requirements by year	Determination of the Reference MD CLC for the first 4 years for new supply applications, or the first 3 years for additional supply applications

Table (h): Definitions and purposes of Final MD and Staggered MD Declaration





- vi. The method for determining CLC period is based on the type of application, as follows:

No.	Application Type	Description	CLC Period
i.	New Supply Application	- Consumer who apply for electricity supply at new premises and require the construction of new supply infrastructure; or - Consumers who apply for supply at existing premises where the supply infrastructure is ready, only require a new meter installation; or - Low Voltage consumer who apply for an additional load and require supply voltage upgrade to Medium or High Voltage	6 years from the date the supply is connected
ii.	Additional Supply Application	Consumers who apply for an additional load and/or require supply voltage upgrade	5 years from the date the supply is connected
iii.	Change of Tenancy (COT) Application	Customers applying for electricity supply under a Change of Tenancy (COT) for an existing premise, which does not involve any new infrastructure	Subject to the remaining CLC period of the previous consumer and load declaration by the new consumer

Table (i): Determination of CLC period based on application type

CLC FOR NEW SUPPLY APPLICATION

- i. Consumer is subjected to CLC for a period of 6 years, commencing from the date the electricity supply is connected.
- ii. Consumer has to declare the Staggered MD **once** for year 1 to 4 upon meter installation application. The declared Final MD will be used to determine the required supply infrastructure and to define the Reference MD for CLC calculations in year 5 and 6.
- iii. The method to determine the Reference MD CLC for new supply applications is as follows:

Year of CLC	Reference MD CLC
1	85% x Staggered MD declared for year 1 or the highest recorded MD, whichever is higher
2	85% x Staggered MD declared for year 2 or the highest recorded MD, whichever is higher
3	85% x Staggered MD declared for year 3 or the highest recorded MD, whichever is higher
4	85% x Staggered MD declared for year 4 or the highest recorded MD, whichever is higher
5	75% x Final MD declared or the highest recorded MD, whichever is higher
6	75% x Final MD declared or the highest recorded MD, whichever is higher

Table (j): Determination of Reference MD CLC for New Supply Applications

- If the recorded MD exceeds the declared MD, the highest recorded MD will become the new MD for determining the Reference MD CLC and will be enforced from the following month.
 - CLC penalty for year 1 to 4 will be imposed on the shortfall against 85% of the declared Staggered MD or the highest recorded MD, whichever is higher.
 - CLC penalty for year 5 and 6 will be imposed on the shortfall against 75% of the declared Final MD or the highest recorded MD, whichever is higher.
- iv. An example of a CLC schedule for new supply applications is provided in **Table 5-(a)**.



CLC FOR ADDITIONAL SUPPLY APPLICATION

- i. Consumer is subjected to CLC for a period of 5 years, commencing from the date the additional supply is connected.
- ii. Consumer has to declare the Staggered MD **once** for year 1 to 3 upon additional supply application. The declared Final MD will be used to determine the required supply infrastructure and to define the Reference MD CLC for year 4 and 5.
- iii. The method to determine the Reference MD CLC for additional supply applications is as follows.

Year of CLC	Reference MD CLC
1	85% x Staggered MD declared for year 1 or the highest recorded MD, whichever is higher
2	85% x Staggered MD declared for year 2 or the highest recorded MD, whichever is higher
3	85% x Staggered MD declared for year 3 or the highest recorded MD, whichever is higher
4	75% x Final MD declared or the highest recorded MD, whichever is higher
5	75% x Final MD declared or the highest recorded MD, whichever is higher

Table (k): *Determination of Reference MD for Additional Supply Applications*

- If the recorded MD exceeds the declared MD, the highest recorded MD will become the new MD for determining the Reference MD for CLC and will be enforced from the following month.
 - CLC penalties for year 1 until 3 will be imposed for any shortfall from 85% of the declared staggered MD or the highest recorded MD, whichever is higher.
 - CLC penalties for year 4 and 5 will be imposed for any shortfall from 75% of the Final MD declared or the highest recorded MD, whichever is higher.
- iv. An example of a CLC schedule for additional supply applications is provided in **Table 5-(b)**.



CLC FOR CHANGE OF TENANCY (COT) APPLICATION

- i. For supply applications made through Change of Tenancy process, where the new consumer's MD is the same as the previous consumer, the determination of the CLC period is as follows:

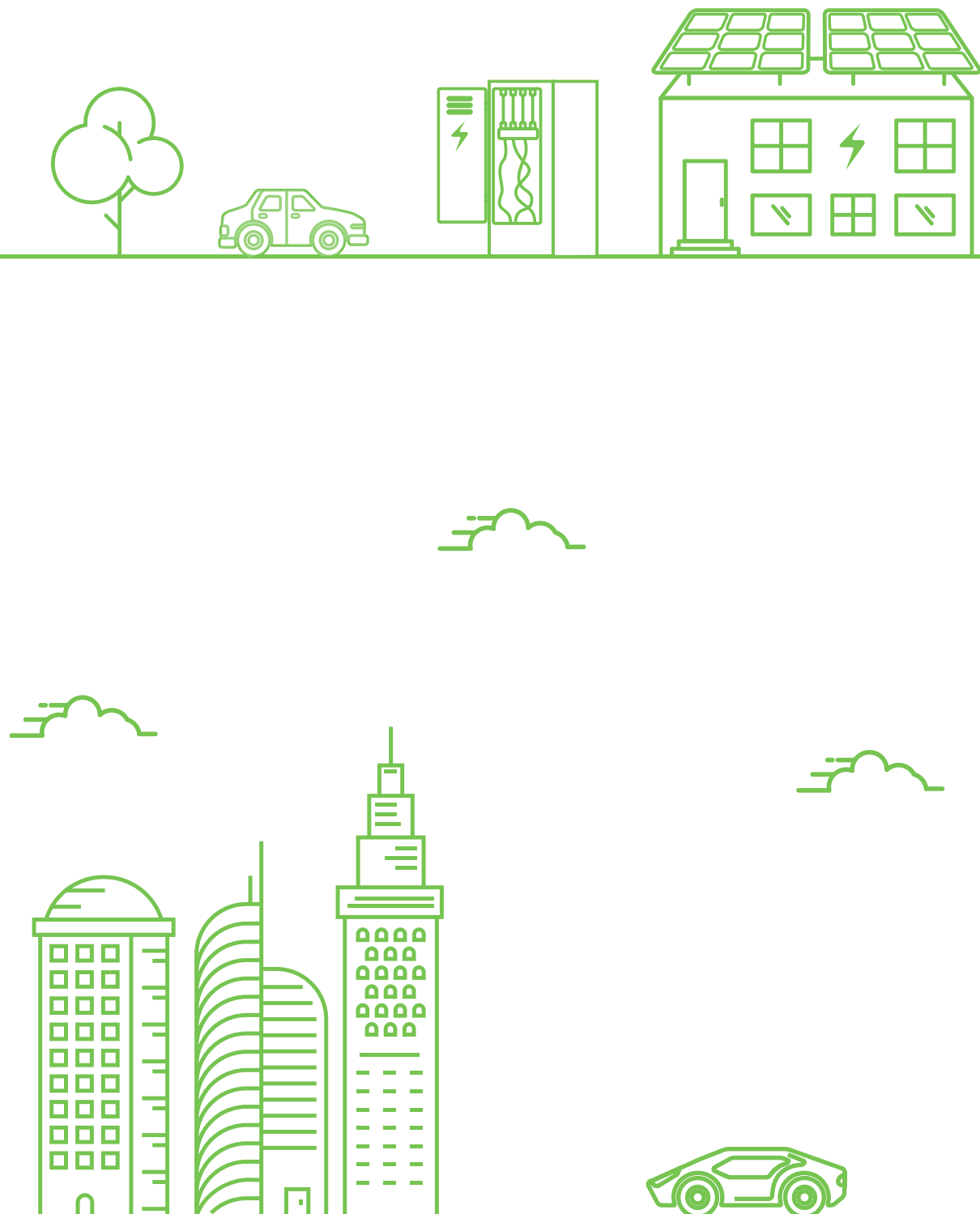
Item	CLC of Previous Consumer		CLC of New Consumer
a.	CLC period has ended		Not subject to CLC
b.	CLC period is still active	i. For a 6-year CLC period and the previous consumer is in year 1-4	The new consumer continues the remaining CLC period of the previous consumer, and the new consumer is given two options for declaring Staggered MD i. Maintain the Staggered MD of the previous consumer; or ii. Declare new Staggered MD for the remaining CLC period up to year 4
		ii. For a 5-year CLC period and the previous consumer is in year 1-3	The new consumer continues the remaining CLC period of the previous consumer, and the new consumer is given two options for declaring Staggered MD: i. Maintain the Staggered MD of the previous consumer; or ii. Declare new Staggered MD for the remaining CLC period up to year 3
		iii. If the previous consumer is in the last 2 years of the CLC period:	The new consumer continues the remaining CLC period while maintaining the final MD declared by the previous consumer

Table (I): Determination of CLC Period for Change of Tenancy Consumer

- ii. If the final MD declared by the new consumer differs from the previous consumer, the new consumer will be subject to CLC for a period of 6 years, in accordance with the terms applicable to new supply applications. The new consumer will also be responsible for the cost of any reconfiguration or additional infrastructure works, if required.
- iii. An example of a CLC schedule for supply applications through the Change of Tenancy process is provided in **Table 5-(c)**.

b. LIQUIDATED DAMAGES

- i. Liquidated Damages (LD) is applicable for Medium and High Voltage consumer who fail to take supply or terminate supply within 5 years period.
- ii. For each month less than a 5 years period, the consumer shall pay $\frac{1}{120}$ of the Net Project Cost, subject to a maximum limit of half of the Net Project Cost. The LD is calculated based on formula as outlined in **Table 6**.



5.0

CONNECTION CHARGES FOR OTHER CONSUMER CATEGORY



5.0 CONNECTION CHARGES FOR OTHER CONSUMER CATEGORY

5.1 TEMPORARY SUPPLY

- a. Temporary supply refers to supply required for installations or infrastructure intended to be temporary or non-permanent where the duration of supply is limited and no specific maximum period is defined.
- b. Examples of temporary supply applications are as follows:



**Funfair/circus/
exhibition sites**



**National/religious
celebration events**



**Construction sites
(including worker quarters)**

- c. A consumer who applies for temporary supply shall be charged at the tariff rate appropriate to their category plus 33% surcharge on the total monthly electricity bill. Temporary supply for Medium and High Voltage consumers are not subject to Connected Load Charge (CLC) and Liquidity Damages (LD).
- d. The Connection Charge (CC) principle is based on the full project cost, where the prescribed rates are as shown in the table below:

No.	Temporary Supply Connection Infrastructure	CC Rate
i.	1 Phase Drop Service (Without New Poles) with MD up to 10kW	RM 450
ii.	3 Phase Drop Service (Without New Poles) with MD up to 37kW	RM 750
iii.	Other than supply connection infrastructure as stated in i and ii above	Full project cost and cost of dismantling the temporary supply infrastructure. Refund based on the Net Book Value (NBV) for assets that can be reused by TNB (if any), such as transformer, switchgear, and compact substation

Table (m): CC Rates for Temporary Supply Applications

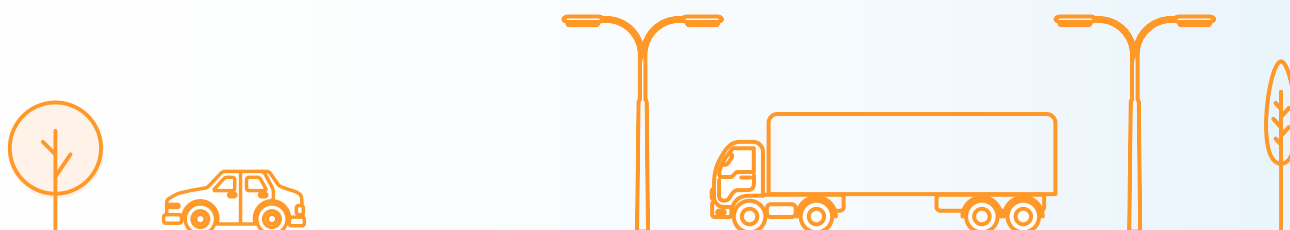
5.2 PUBLIC AND INDIVIDUAL LIGHTING

a. The installation of public and individual lighting involves applications for the following requirements:

- Streetlight either HPSV* or LED**, where poles and lantern provided by TNB or third party such as Local Authority/*Jabatan Kerja Raya (JKR)*
- Individual Streetlight (HPSV or LED)
- Individual Compound Lighting LED

*HPSV - High Pressure Sodium Vapor

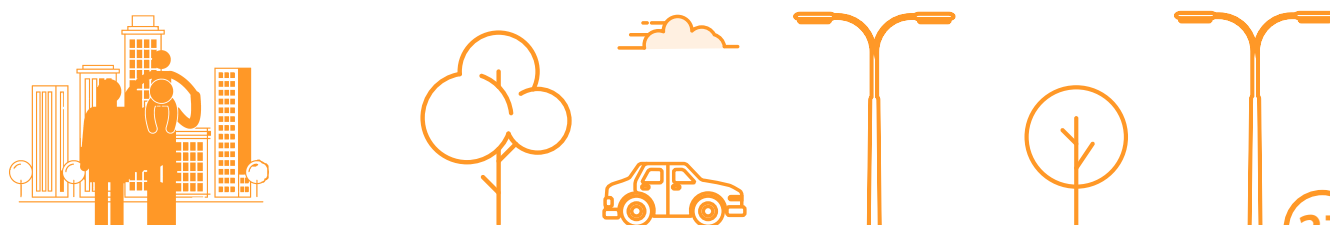
**LED - Light Emitting Diode



b. The Connection Charge (CC) principle is based on the full project cost, where the rates are as stated in the table below

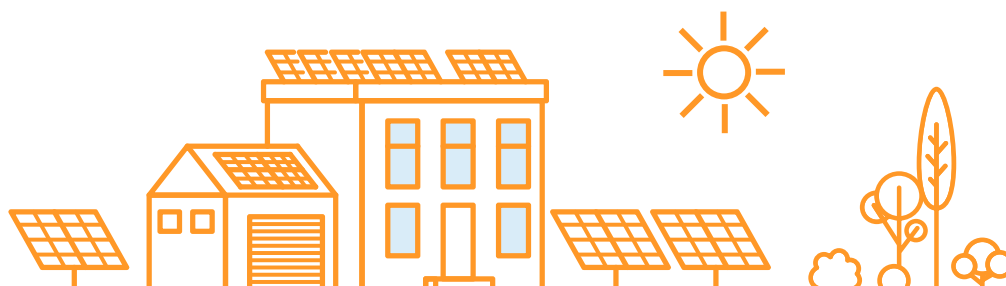
Application Category	CC Rate
• HPSV Streetlight • HPSV Individual Streetlight	Rates for streetlight installation: i. RM 300/lantern on existing poles ii. RM 600/pole for each additional pole and new line iii. RM900 for each installation of lantern with a new pole and new line <i>(Excludes the scope of new infrastructure construction for Low Voltage or Medium Voltage levels, if required.)</i>
• LED Streetlight • LED Individual Streetlight • LED Individual Compound Lighting	Full Project Cost

Table (n): CC Rates for Public and Individual Lighting



5.3 CO-GENERATOR

- a. A co-generator refers to a consumer who is licensed by the Energy Commission to generate electricity for their own use. Co-generating consumers also require electricity supply from TNB as a standby supply in the event of maintenance or disruption in their own generation system. If the consumer's generation system is insufficient to meet the total demand required for operations, TNB will provide an additional supply.



- b. Co-generator consumer is not subject to the Connected Load Charge (CC) and Liquidated Damages (LD).
- c. The CC principle is based on the full project cost, as outlined in the following table:

Application Category	CC Rate
New Application	Full* project cost
Conversion From Existing Scheme to Co-Generator Scheme	Full* project cost based on • Net Book Value (NBV) for retained infrastructure and/or • Net Market Value (NMV) for infrastructure sold/transferred and/or disposed/dismantled

Table (o): CC Rates for Co-Generator Consumer

**If the supply scheme is 'fully dedicated'. Otherwise, consumer/developer will be charged using a apportionment method based on the declared Maximum Demand, relative to the capacity of the infrastructure installed by TNB*



5.4 PUBLIC DISTRIBUTION LICENSEE (PDL)

- A public distribution license is a consumer who obtains a license from *Suruhanjaya Tenaga* to distribute electricity to consumers within their distributed area (franchise area).
- Electricity supply from TNB is taken in bulk through a single meter at any voltage level, depending on the declared Maximum Demand.
- The CC principle is based on the full project cost, as per the following table:

Application Category	CC Rate
New Application	Full* project cost
Conversion From Existing Scheme to PDL Scheme	Full* project cost based on - Net Book Value (NBV) for retained infrastructure and/or - Net Market Value (NMV) for infrastructure sold/transferred and/or disposed/dismantled

Table (p): CC Rates for Public Distribution Licensee

**if the supply scheme is 'fully dedicated'. Otherwise, consumer/developer will be charged using a apportionment method based on the declared Maximum Demand, relative to the capacity of the infrastructure installed by TNB.*

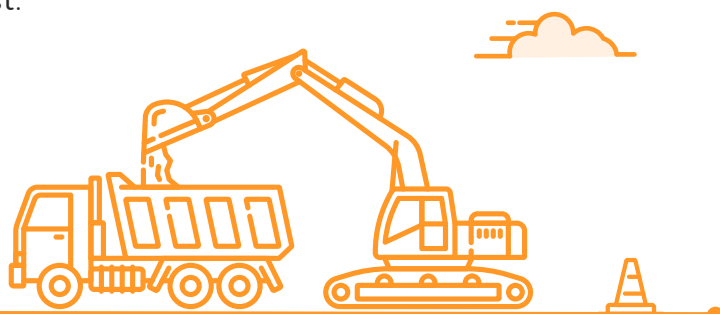
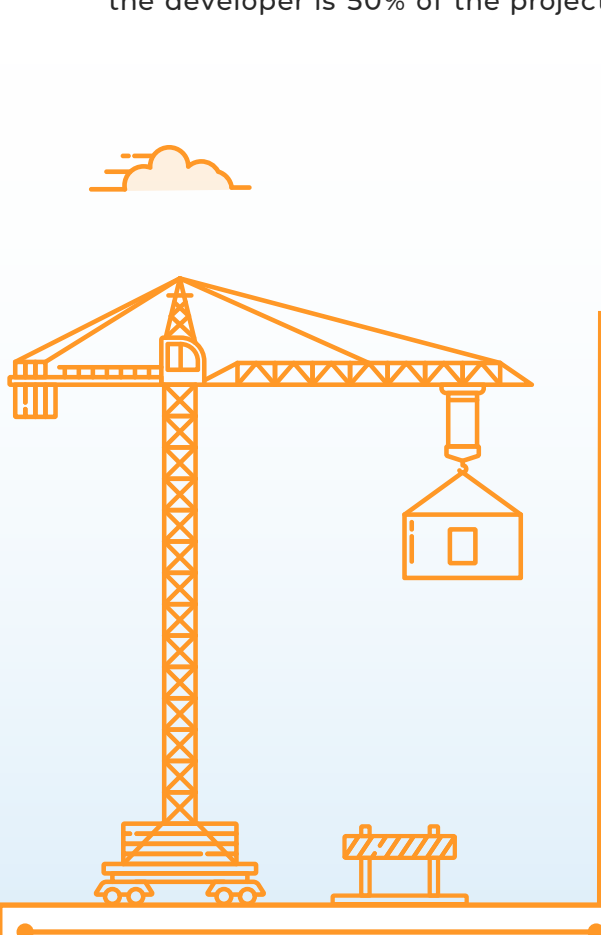
5.5 TRACTION

- Traction consumer are those who operate rail-based transportation such as KTMB, MRT, and LRT.
- The CC principle is based on the full project cost for a 'fully dedicated' supply scheme. Otherwise, consumer/developer will be charged using a apportionment method based on the declared Maximum Demand, relative to the capacity of the infrastructure installed by TNB.

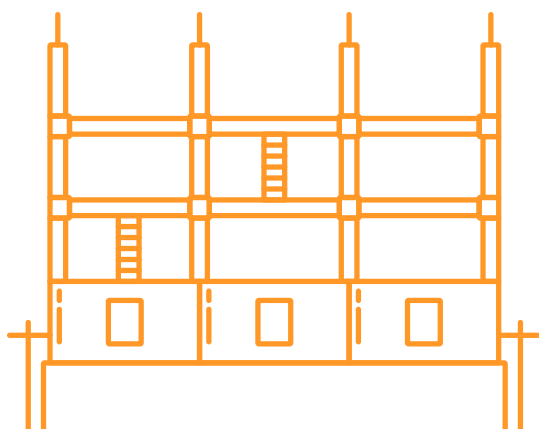


5.6 INFRASTRUCTURE AREA DEVELOPMENT

- a. Infrastructure Area Development refer to electricity supply project where the electrical infrastructure is provided by TNB as requested by the developer for the development with no specific consumer identified yet (*greenfield*).
- b. For applications under this category, the developer and TNB will share the total project cost on a 50-50 basis, where the Connection Charge (CC) to be paid by the developer is 50% of the project cost.



- c. The CC paid by the developer shall be subject to refund in accordance with the following calculation method:
 - i. If, within 5 years of the electrical infrastructure is provided and the consumer connected to the infrastructure have declared a Maximum Demand (MD) equal or exceeding 25% of the installed capacity, the full amount of CC paid by the developer will be reimbursed.
 - ii. If, within a period of 5 years, the supply uptake is slow and the declared MD is less than 25% of the installed capacity, the amount to be refunded to the developer will be calculated on a pro-rated basis according to the declared MD.
 - iii. If, within 5 years of the electrical infrastructure being provided, no individual consumer take up the supply in that development area, the CC paid by the developer will not be reimbursed.



6.0

OTHER CHARGES



6.0 OTHER CHARGES

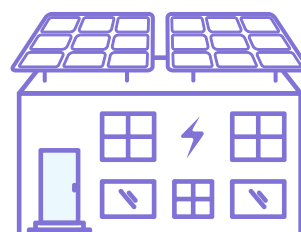
6.1 RECONNECTION FEE

- a. In scenarios where a new consumer applies for electricity supply at an existing premise with TNB infrastructure that is still in good condition, reconnection fees will be imposed based on the voltage category as follows:

Low Voltage	Medium Voltage & High Voltage
RM3.00	RM80.00

Table (q): Reconnection Fee

- b. If TNB needs to provide new infrastructure at the existing premises, new connection charge will be imposed.



6.2 ADMINISTRATION FEE

- a. For scenarios where the consumer/developer applies for cancellation of the supply application before TNB commences work due to certain reasons, the refund of Connection Charge (CC) to the consumer/developer will be subject to an administration fee. The administration fee is imposed on the CC amount paid, at the rate specified in Table (r) below, before the remaining balance is refunded.

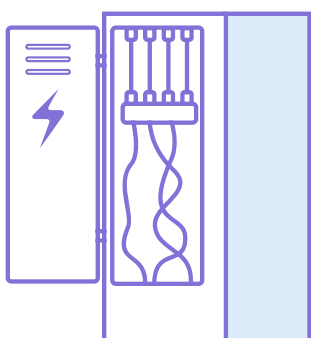
Low Voltage and Medium Voltage	High Voltage
10% of the paid connection charges with a maximum limit of RM5,000	RM50,000

Table (r): Administration Fee for Project Cancellation



6.3 SURCHARGE FOR INSTALMENT

- a. Consumer who apply to pay the CC in instalments is subjected to a surcharge.
- a. TNB will commence work after the first CC payment is made by the consumer, and the supply will only be connected once the consumer has paid the remaining CC including the surcharge.

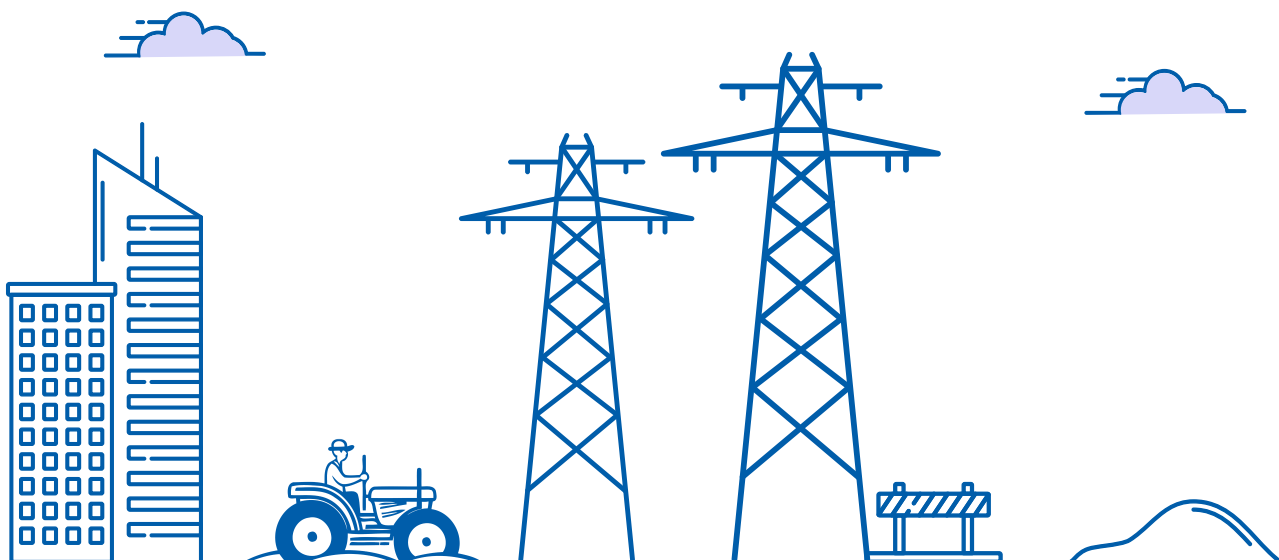


LAND AND BUILDING FOR SUBSTATION



7.0 LAND AND BUILDING FOR SUBSTATION

- a. For load requirement equal to or less than 60kW, the consumer/developer may be required by TNB to provide land and construct a substation, namely *Pencawang Elektrik (PE)* if the nearest distribution substation is unable to meet the requested load demand.
- b. For load requirement exceeding 60kW, the consumer/developer is required to provide substation land for distribution substation such as PE and/or Main Distribution Substation (*Pencawang Pembahagian Utama (PPU)*), whether indoor or outdoor.
- c. If the load requirement requires TNB to build a Transmission Main Intake (*Pencawang masuk Utama (PMU)*), the consumer/developer is required to provide a land for the construction of the PMU.
- d. Providing land refers to the transfer of land to TNB, either in the form of transfer of ownership (freehold or leasehold) or by alienation. The consumer/developer is required to bear all costs related to the land for the purpose of constructing distribution substations such as PE, PPU and PMU in accordance with the requirements and specifications stated in the Electricity Supply Application Handbook (ESAH).
- e. Providing a substation means providing a space, rooms, buildings, or plinth for compact substations, whether indoor or outdoor.
- f. For items (d) and (e) above, the handover of the substation land shall be completed through a transfer of ownership to TNB at a nominal consideration of RM10.00. In the event that the title for the substation land has not been issued, all costs incurred by TNB in acquiring the land through the alienation process shall be borne by the consumer/developer.
- g. If the consumer/developer or land owner and TNB fail to reach an agreement in respect of the land, the land cost shall be determined in accordance with the provisions of the Electricity Supply Act 1990, and the connection charges shall be determined accordingly.



8.0

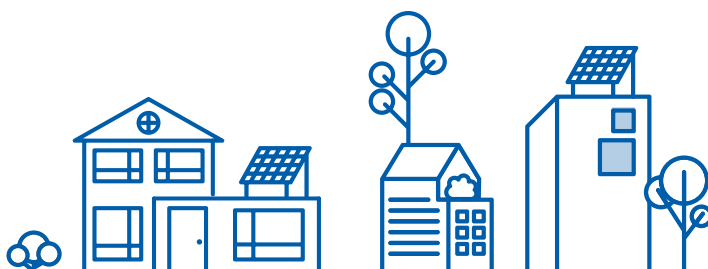
LIST OF TABLES



TABLE 1

CONNECTION CHARGES FOR LOW VOLTAGE CONSUMER (INDIVIDUAL/GROUP)

MAXIMUM DEMAND (kW)	CONSUMER CATEGORY / SUPPLY SCHEME	CONNECTION CHARGE*	
		OVERHEAD LINE	UNDER GROUND CABLE
1 PHASE SUPPLY (230V)			
Up to 10	Domestic		
	Low-Cost House (Landed/Flat/Apartment) /Hardcore Poor Housing Project (e.g. PPRT, Rumah Baitulmal) ¹	RM 250	
	Landed Building (e.g. Terrace, Semi-D, Bungalow)	RM 450	RM 1,700 ²
	Building with Grouped Meters (e.g. Flat, Apartment, Condominium)	RM 450	
	Non-Domestic	RM 450	RM 1,700 ²
3 PHASE SUPPLY (400V)			
Up to 37	Domestic		
	Landed Building (e.g. Terrace, Semi-D, Bungalow)	RM 750	RM 1,700
	Building with Grouped Meters (e.g. Flat, Apartment, Condominium)	RM 1,700	
11 to 37	Non-Domestic	RM 1,700	
38 to 60	Domestic & Non-Domestic	RM 2,700	



MAXIMUM DEMAND (kW)	CONSUMER CATEGORY / SUPPLY SCHEME	CONNECTION CHARGE*	
		OVERHEAD LINE	UNDER GROUND CABLE
3 PHASE SUPPLY (400V) - CURRENT TRANSFORMER**			
61-90	150/5	RM 4,050	
91-120	200/5	RM 5,400	
121-180	300/5	RM 8,100	
181-240	400/5	RM 10,800	
241-360	600/5	RM 16,200	
361-480	800/5	RM 21,600	
481-600	1000/5	RM 27,000	
601-720	1200/5	RM 32,400	
721-850 ³	1500/5	RM 38,250	

*Where the land and building for the substation are handed over or leased to TNB at a nominal consideration of RM 10, or if no substation is required

**The ratio/size of the current transformer on site, as specified by TNB, is subject to technical requirements



Notes:

1. Definition of low-cost houses, housing projects for lowest-income, and similar projects is based on the definitions provided by the relevant government agencies. The rate of RM 250 per unit is limited to the installation of a single-phase supply only. For three-phase supply, the CC rate is the same as other consumer.
2. RM1,700 is a standard charge for consumers applying for a single-phase supply through underground cables (service cables only).
3. For loads requiring installations exceeding 1,000 kVA (850kW), the supply must be taken at the Medium Voltage level.

Terms and Conditions:

1. The above rates only applied for supply applications where the supply source is no more than 6km from the nearest available source that can meet the consumer's demand/load.
2. For any supply requests exceeding 6km from the nearest available source that can meet the consumer's demand load, additional cable charges is applied.
3. Consumer is also subject to additional charges for special requests by consumer and/or third-party requirements (if applicable).
4. For electrical substation land handed over by the consumer/developer to TNB, NOT at a nominal consideration of RM10, all transactions and costs related to the land will be borne by the consumer/developer.

TABLE 2

ADDITIONAL CABLE CHARGE RATES FOR DISTANCES EXCEEDING 6KM FROM THE NEAREST SUPPLY SOURCE

NO.	CABLE TYPE AND SIZE	RATE PER METER (RM)
33kV CABLES		
1.	UNDERGROUND CABLE, 33KV, XLPE, AL, 1C, 3x630MMP	850
2.	OVERHEAD LINE, ABC, 33KV, AL, 3x150MMP	171
11kV CABLES		
3.	UNDERGROUND CABLE, 11KV, XLPE, AL, 3C, 95MMP	110
4.	UNDERGROUND CABLE, 11KV, XLPE, AL, 3C,150MMP	124
5.	UNDERGROUND CABLE, 11KV, XLPE, AL, 3C,240MMP	149
6.	UNDERGROUND CABLE, 11KV, XLPE, AL, 1C,3x500MMP	212
7.	OVERHEAD LINE, ABC, 11KV, AL, 3x70MMP	99
8.	OVERHEAD LINE, ABC, 11KV, AL, 3x150MMP	116
9.	OVERHEAD LINE, ABC, 11KV, AL, 3x240MMP	137

Note:

The above additional cable charge rates also apply to service cables exceeding 30 meters and additional 11kV service cables. These rates are subject to change based on the latest approval by the Government.

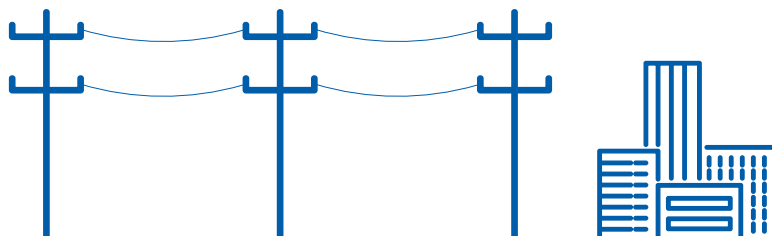


TABLE 3

SPECIAL REQUEST CHARGE RATES FOR CONSUMERS/DEVELOPERS FOR ADDITIONAL 11kV FEEDER AND SINGLE PHASE UNDERGROUND SERVICE CABLE

No.	Special Request by Consumer/Developer	Charge Rate
i.	Additional 11kV Feeder	RM 50,000/unit of additional switchgear (Vacuum Circuit Breaker, VCB)*
ii.	Underground service cable for single phase supply	RM 1,700.00 (as stated in Table 1)

Note:

*The cable laying rates for additional 11kV service cables for each additional feeder are as specified in **Table 2**.

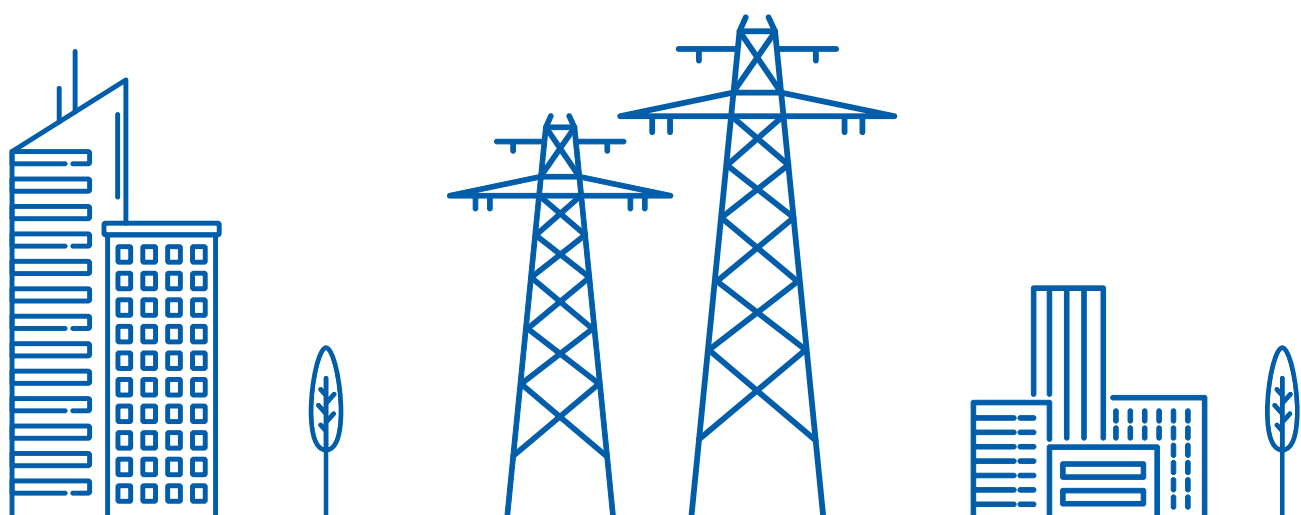


TABLE 4

EXAMPLES OF COMPARISONS BETWEEN TNB'S STANDARD SCHEME AND SPECIAL CONSUMER REQUESTS AND/OR THIRD-PARTY REQUIREMENTS

No.	Standard Scheme (Referring to current TNB policies & ESAH)	Special Consumer Requests And/Or Third-Party Requirements
1.	For Medium Voltage consumers, the electrical supply system is designed to meet a restoration time of less than 4 hours (Security Level 3) in the event of a supply disruption	Consumer applications for enhanced system security, such as a restoration time of less than 15 minutes, or requests for a supply scheme that meets the requirements of Multimedia Super Corridor (MSC)/Malaysia Digital status
2.	For 1-phase supply or 3-phase low voltage supply applications to residential areas, the electricity supply is provided using overhead lines	Developers request supply scheme of fully underground cables to residential areas for aesthetic purposes
3.	For the purpose of supplying electricity via underground cables, the cable laying method involves open trenching on the ground using ducting pipes	Requirement from Local Authority or Government Agency such as: Cable laying method using Horizontal Direct Drilling (HDD)/micro tunnelling/ cable bridge and Mill & Pave
4.	For High Voltage consumer, the installation system is using Air Insulated System (AIS) type	Consumer requests for the installation system using Gas Insulated System (GIS) type due to space constraints
5.	For High Voltage consumers, the supply is provided via overhead lines	Consumer requests to use fully underground cables
6.	Installation of HPSV type for street lights	Requests for the installation of LED streetlights

Other examples of special request by consumer/third party requirements include mill & pave, landscaping, utility mapping, and land survey.



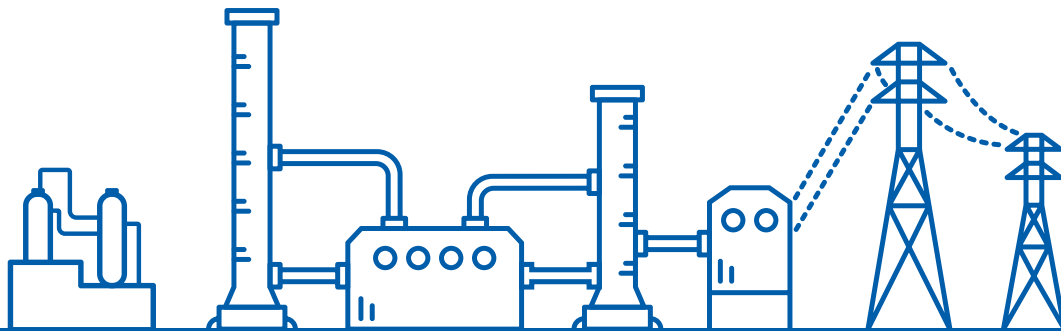
TABLE 5

EXAMPLE OF A CONNECTED LOAD CHARGE (CLC) SCHEDULE

a. New Supply Application

The consumer applies for supply at Medium Voltage level with a load requirement (Final MD) of 10,000 kW and Staggered MD declared as follows:

Year 1	2,000kW
Year 2	4,000kW
Year 3	6,000kW
Year 4	8,000kW
Year 5 & 6	10,000kW (Final MD)

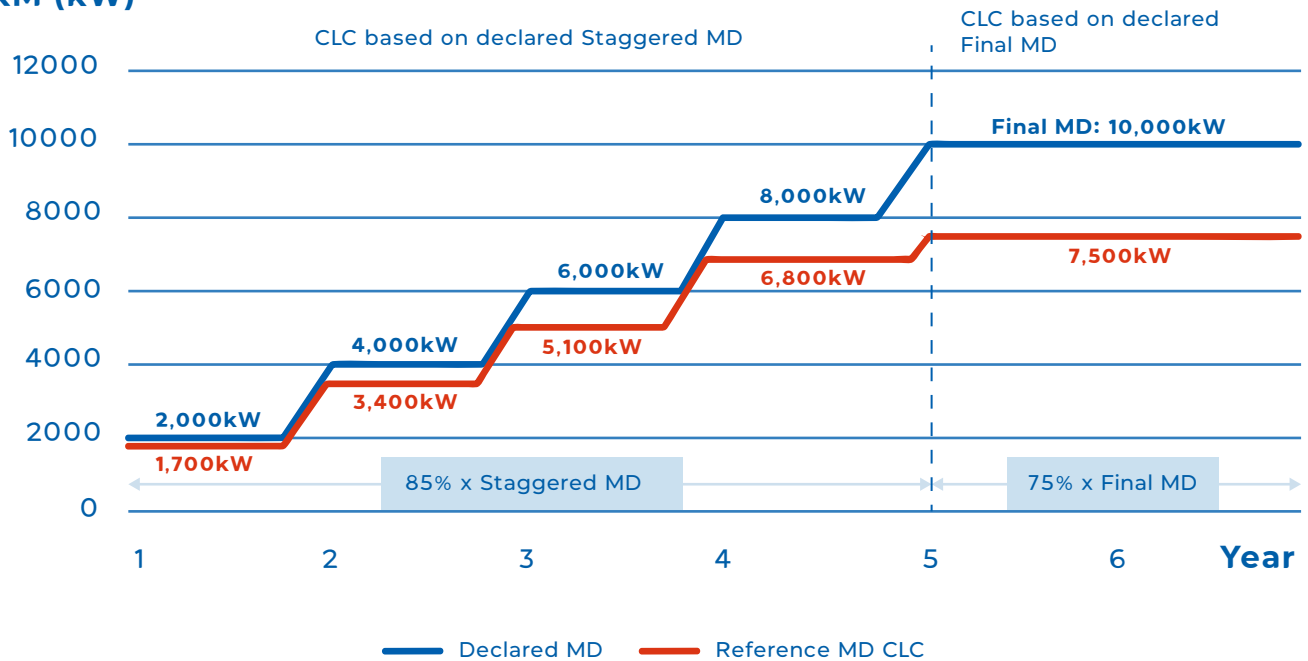


Reference MD CLC that must be achieved to avoid the monthly CLC penalty are as follows:

Year of CLC	Reference MD CLC Calculation	Reference MD CLC
1	$85\% \times 2,000\text{kW}$	1,700kW
2	$85\% \times 4,000\text{kW}$	3,400kW
3	$85\% \times 6,000\text{kW}$	5,100kW
4	$85\% \times 8,000\text{kW}$	6,800kW
5	$75\% \times 10,000\text{kW}$	7,500kW
6	$75\% \times 10,000\text{kW}$	7,500kW

The graph below compares the Reference MD CLC with the declared MD by the consumer.

KM (kW)



Scenario:

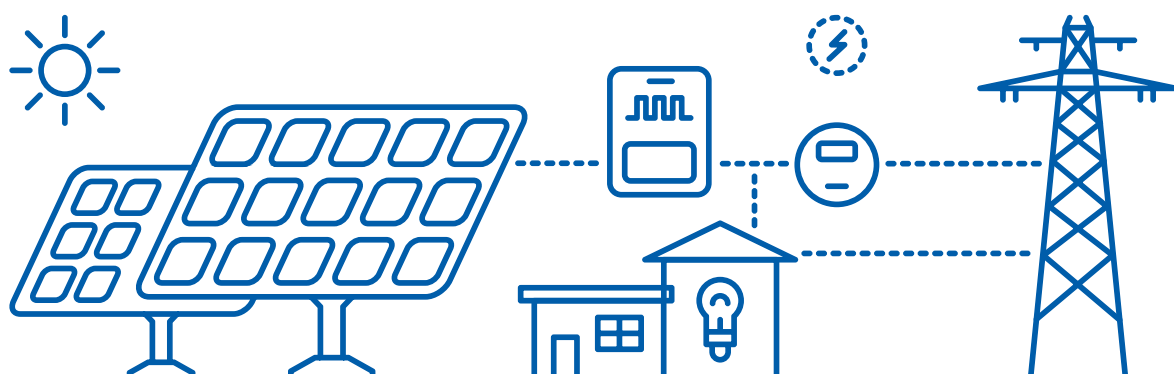
- If in Year 2 the highest recorded MD reaches 9,000kW, the Reference MD CLC calculation shall be based on that highest KM, 9,000kW for the following months until Year 4.
- If in Year 2 the highest recorded MD reaches 11,000kW, the Reference MD CLC calculation shall be based on that highest KM, 11,000kW for the following months until CLC period end.



b. Additional Supply Application

A Medium Voltage consumer with an initial MD of 6,000 kW has applied for an additional load of 4,000 kW in Year 2 of the CLC period, thereby increasing the Final MD to 10,000 kW. The declared Staggered MD for this additional load application are as follows:

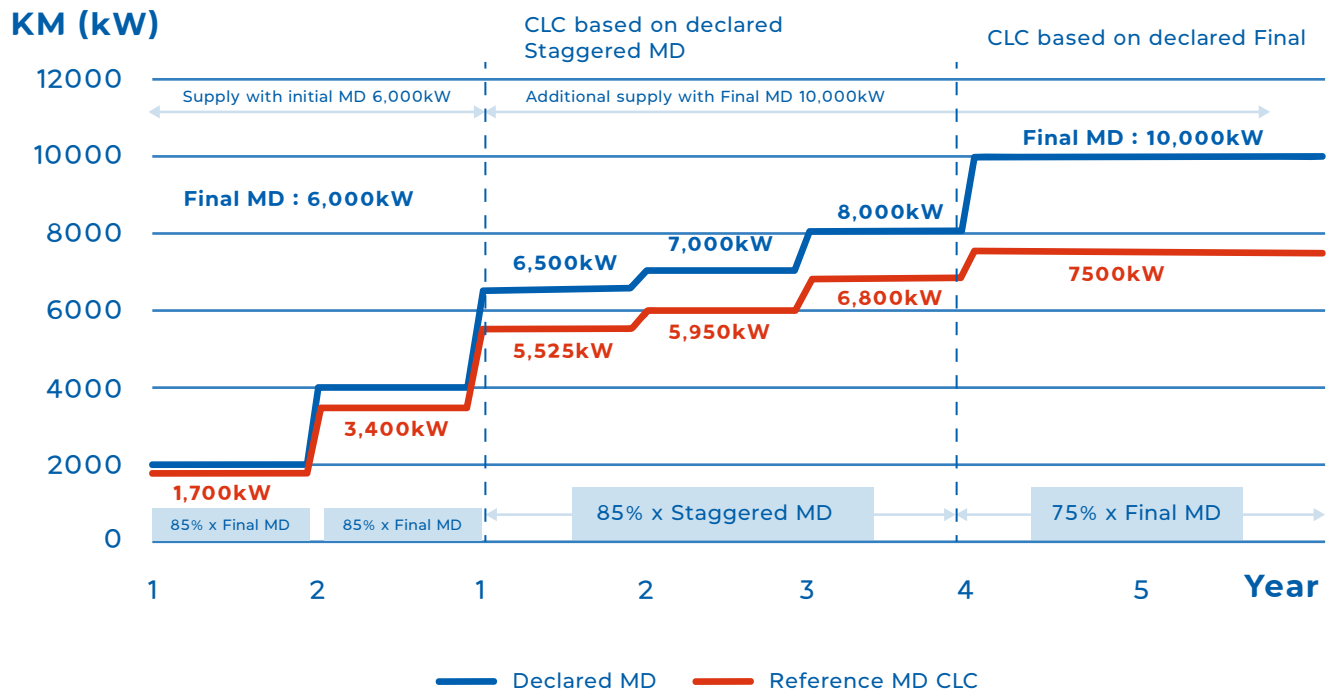
Year 1	6,500kW
Year 2	7,000kW
Year 3	8,000kW
Year 4 & 5	10,000kW (Final MD)



Reference MD CLC that must be achieved to avoid the monthly CLC penalty are as follows:

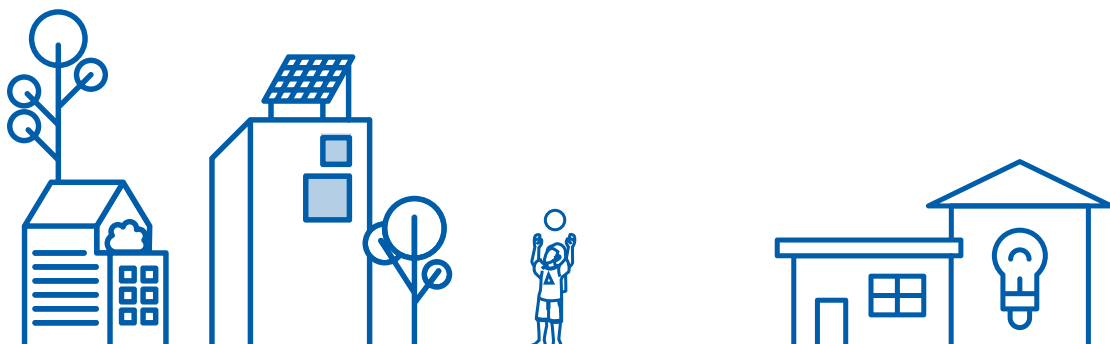
Year of CLC	Reference MD CLC Calculation	Reference MD CLC
1	$85\% \times 6,500\text{kW}$	5,525kW
2	$85\% \times 7,000\text{kW}$	5,950kW
3	$85\% \times 8,000\text{kW}$	6,800kW
4	$75\% \times 10,000\text{kW}$	7,500kW
5	$75\% \times 10,000\text{kW}$	7,500kW

The graph below compares the Reference MD CLC with the declared MD by the consumer:



Scenario:

- If in year 2, the highest recorded MD reaches 9,000kW, the Reference MD CLC calculation will refer to that highest MD, i.e., 9,000kW, for the following months until year 3.
- If in year 2, the highest recorded MD reaches 11,000kW, the Reference MD CLC calculation will refer to that highest MD, i.e., 11,000kW, for the following months until the CLC period end.



c. Change of Tenancy (COT) Application

MD and CLC Information for the previous consumer:

- i. **Final MD declared:** 10,000kW
- ii. **Current CLC Year:** Year 2
- iii. **Staggered MD declared:**

Year 1	2,000kW
Year 2	4,000kW
Year 3	6,000kW
Year 4	8,000kW



Scenario 1:

The new consumer applied for supply to this premise through a COT in the 2nd year CLC of the previous consumer. The new consumer request to maintain the Staggered MD and Final MD declaration of the previous consumer. New consumer will continue the existing CLC table until the end of CLC period

Reference MD CLC that must be achieved to avoid the monthly CLC penalty are as follows:

Year of CLC	Reference MD CLC Calculation	Reference MD CLC
1	$85\% \times 2,000\text{kW}$	CLC ended for Year 1
2	$85\% \times 4,000\text{kW}$	3,400kW
3	$85\% \times 6,000\text{kW}$	5,100kW
4	$85\% \times 8,000\text{kW}$	6,800kW
5	$75\% \times 10,000\text{kW}$	7,500kW
6	$75\% \times 10,000\text{kW}$	7,500kW

Scenario 2:

The new consumer applied for supply to this premise through a COT in the 2nd year CLC of the previous consumer. The new consumer will maintain the final MD declaration of the previous consumer and has opted to re-declare the staggered MD for year 2 to year 4 as follows:

Year 2	3,000kW
Year 3	5,000kW
Year 4	7,000kW

Reference MD CLC that must be achieved to avoid the monthly CLC penalty are as follows:

Year of CLC	Reference MD CLC Calculation	Reference MD CLC
1	$85\% \times 2,000\text{kW}$	CLC ended in Year 1
2	$85\% \times 3,000\text{kW}$	2,550kW
3	$85\% \times 5,000\text{kW}$	4,250kW
4	$85\% \times 7,000\text{kW}$	5,950kW
5	$75\% \times 10,000\text{kW}$	7,500kW
6	$75\% \times 10,000\text{kW}$	7,500kW



TABLE 6

LIQUIDATED DAMAGES

The formula for calculating liquidated damages is as follows:

$$\begin{aligned}\text{Liquidated Damages} &= 1/120 \times (60-n) \times \text{Net Project Cost} \\ &= \frac{(60-n) \times (P-C)}{120}\end{aligned}$$

Where

P : Total TNB project cost

C : Connection Charge*

(P-C) : Net Project Cost

n : Number of months after electricity supply is commissioned.

Note:

*For High Voltage consumers, the value of C is determined using the 1st Principle method or Refundable Connection Charges (RCC) (bank guarantee or cash) as required by TNB.

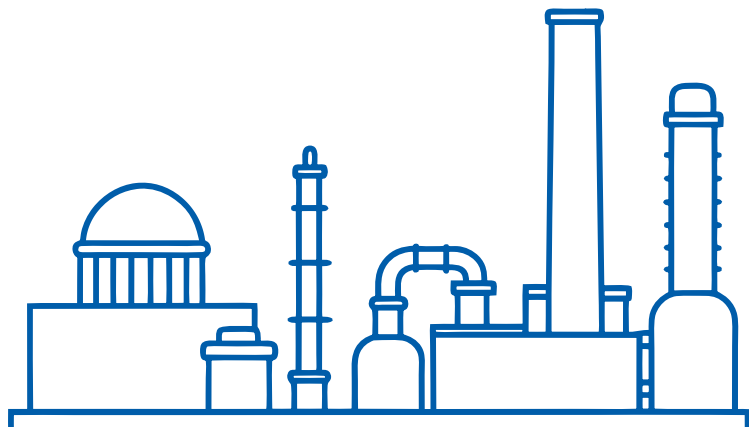
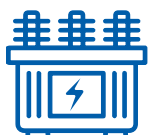


TABLE 7

CALCULATION OF CONNECTION CHARGE (CC) FOR HIGH VOLTAGE CONSUMERS

1st Principle is the method used to calculate connection charge for high voltage consumers. Under this method, the CC is determined by comparing the projected return from the consumer over a 15-year supply period against the project cost incurred to provide the supply.

- a. If the return is less than the project cost, the customer shall pay the CC based on the following formula:

$$\text{Connection Charge} = \text{Project Cost} - \text{Total Return}^*$$

*The Total Return is determined using the Present Value of Future Cash Flow principle, based on Weighted Average Cost of Capital (WACC) as approved by the Government.

- b. If the estimated return exceeds the project cost, no CC is imposed, i.e. CC will be equivalent to RM0.
- i. In the scenario where CC = RM0, the consumer is required to provide a Refundable Connection Charge (RCC) equivalent to 25% of the project cost. The RCC may be paid either in cash or via bank guarantee (BG).
- ii. Within a period of 6 years (for new supply consumer) or 5 years (for existing consumers applying for additional supply) from the date supply is commissioned:
- If the consumer achieves at least 75% of the declared Final Maximum Demand (MD), the RCC will be returned.
 - If the consumer fails to achieve at least 75% of the declared Final MD, any RCC paid in cash will not be refunded, while any RCC secured via a Bank Guarantee (BG) will be forfeited by TNB.

Example of CC Calculation using 1st Principle

Project Cost

= RM 500,000,000

Calculation for Total Return using Present Value of Future Cash Flow Principle

1. Load Information

Average Maximum Demand	= 40,000kW
Payback Period	= 15 years
Load Factor	= 0.90
Peak To Total Consumption	= 0.22
Annual Sales	= Average Maximum Demand x Load Factor x 730 hours x 12 months
	= 315,360,000 kWh

2. Annual Revenue Information

Example : Non-Domestic High Voltage Time of Use (ToU) Tariff, effective 1st July 2025

Item	Tariff Rate	Usage (kWh/kW)	Total (RM)
Energy Charge - For all kWh during the peak period	RM0.4452/kWh	69,379,200 kWh	30,887,619.84
Energy Charge - For all kWh during the off-peak period	RM0.4043/kWh	245,980,800 kWh	99,450,037.44
Capacity Charge - Each kilowatt of maximum demand per month during the peak period	RM21.76/kW	480,000 kW	10,444,800.00
Network Charge - Each kilowatt of maximum demand per month during the peak period	RM23.06/kW	480,000 kW	11,068,800.00
Retail Charge	RM250	12 months	3,000.00
Total			151,854,257.28

Tariff is subject to revision in line with the regulatory period.

3. Annual Sales Cost Information (Running Cost @ High Voltage ToU Tariff = RM0.3333/kWh)

= Annual Sales x *Running Cost*
 = 315,360,000 kWh x RM0.3333/kWh
 = RM105,109,488.00

Running Cost are subject to revision according to the tariff category and regulatory period.

4. Consumer Related Charge

= RM 6,000

Consumer related charges for 1st Principle calculation

5. Present Value Interest Factor of Annuity (PVIFA) = $(1 - (1 + WACC)^{-Lifespan}) / WACC$

= $(1 - (1 + 7.3\%)^{-15}) / 7.3\%$
 = 8.9378

Where by

WACC = 7.3% (subject to changes based on regulatory period)
 Lifespan = 15 years

6. Present Value of Future Cash Flow (PV)

PV = PVIFA x (Annual Revenue - Annual Sales Cost - Consumer Related Charges)
 = 8.9378 x (RM151,854,257.28 - RM105,109,488.00 - RM6,000)
 = RM417,742,477.00

Connection Charge (CC)

The consumer will be imposed CC when the *Present Value of Future Cash Flow* is lower than the Project Cost

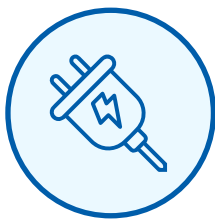
CC = Project Cost - Total Return (Present Value of Future Cash Flow)
 = RM500,000,000 - RM417,742,477.00
 = RM82,257,523

TABLE 8

PREMIUM RATES FOR FAST TRACK PROJECTS

Level	Fast Track Period (Months)	Premium (% from Project Cost)
1	0 - 12	15
2	13 - 18	10
3	19 - 24	5

- i. Premium charge is a separate cost and not part of the project cost to calculate the load charges under 1st Principle.
- ii. Fast Track eligibility is subject to TNB approval, based on the criteria established for each consumer category.
- iii. Before construction begins, to ensure supply can be delivered within the Project Execution Period, consumers must meet the following **condition precedents**:



a. **Connection Charge has been paid**



b. **Electricity Supply Agreement (ESA) has been signed**



c. **Issues related to land have been resolved**



d. **Other Condition Precedents, depending on the project, have been met**

(For example: Technical Condition Precedents)

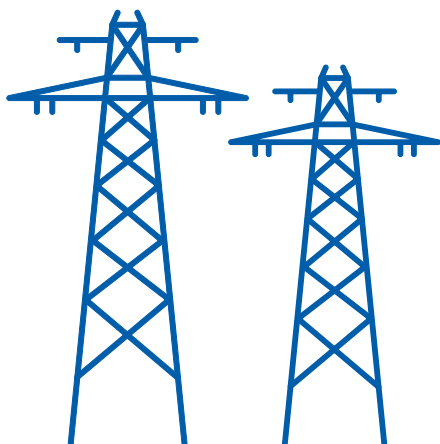


TABLE 9

LIQUIDATED DELAY DAMAGES FOR FAST TRACK PROJECT

The formula for calculating Liquidated Delay Damages (LDD) is as follows:

$$\text{LDD} = \frac{15\% \times P \times nd}{180}$$

Where

P : Project Cost

nd : i. Number of days delayed after TNB has commissioned the supply, in the scenario where the consumer is late in taking supply; or
ii. Number of days delayed for TNB to deliver the supply, in the scenario where the consumer is ready to get the supply.

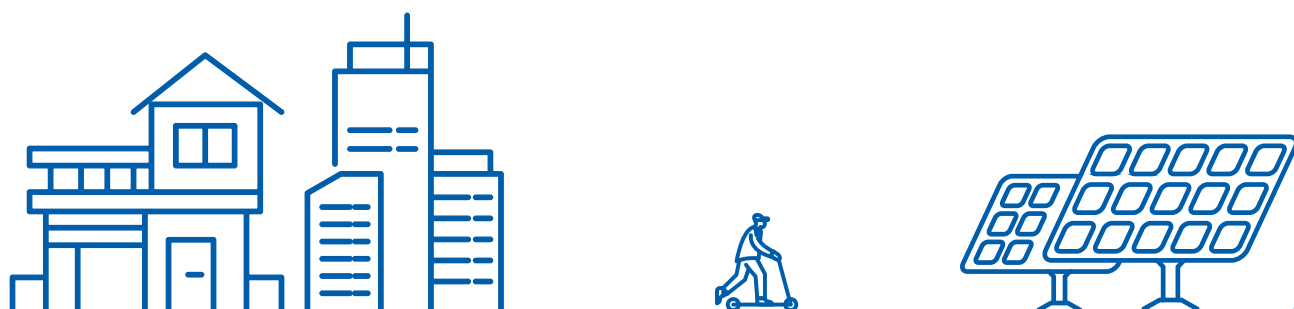


TABLE 10

PROJECT MINIMUM MONTHLY CHARGE (PMMC)

PMMC is calculated based on the following formula:

$$\text{PMMC} = 2\% \text{ of the Net Project Cost} = 0.02 \times (P - CC)$$

Where

P : Project Cost

CC : Connection Charge based on the 1st Principle

- i. The enforcement period of the PMMC shall be for the first 5 years from the commencement of supply.
- ii. Upon the expiry of this period, the consumer is subjected to monthly bill based on the prevailing tariff and monthly consumption.

