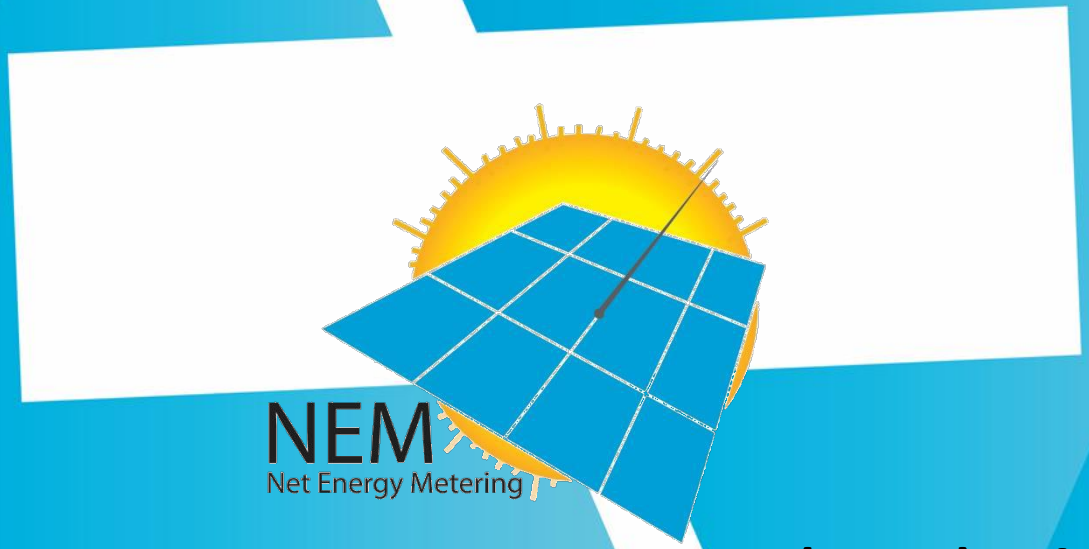
Sustainable Energy Development Authority (SEDA) Malaysia

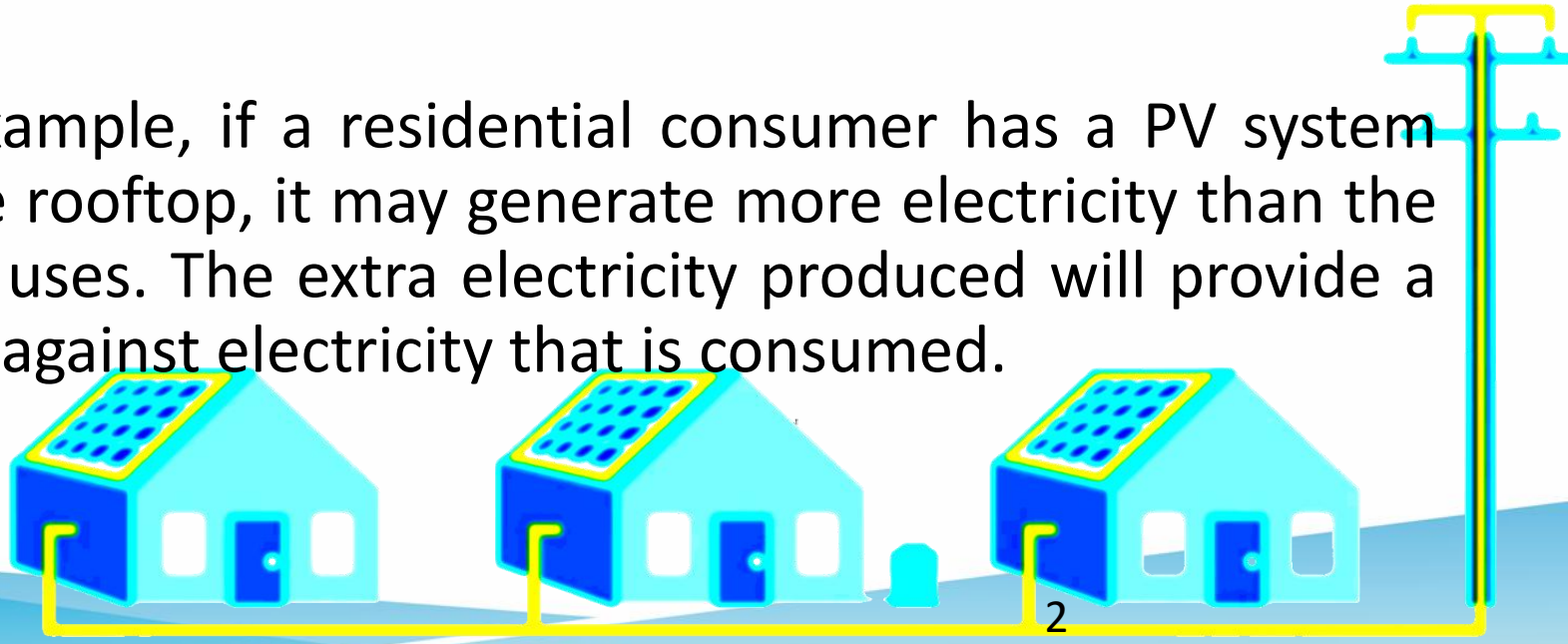


Briefing on Net Energy Metering (NEM) Scheme
19 October 2016

What is Net Energy Metering (NEM)?

A mechanism where an **eligible consumer installs a solar PV system primarily for his own use and the excess energy to be exported to the grid** for which credit to be received that may be used to **offset part of the electricity bill** for energy provided by the Distribution Licensee (TNB/SESB) to the electricity consumer during the applicable billing period.

- For example, if a residential consumer has a PV system on the rooftop, it may generate more electricity than the home uses. The extra electricity produced will provide a credit against electricity that is consumed.



NEM Implementation

Implementation of NEM

Suruhanjaya Tenaga
(Issuer of NEM Guidelines)

SEDA
(Implementing Agency)

DL
(Customer Contract)

Domestic Customer

Commercial Customer

Industrial Customer

NEM Quota (2016-2020)

Quota Allocation (proposed)											
Location		**Peninsular**					**Sabah**				
Year		2016	2017	2018	2019	2020	2016	2017	2018	2019	2020
Category of Consumers	**Domestic/Residential, MWp**	20	20	20	20	20	4	4	4	4	4
	Commercial, MWp	35	35	35	35	35	4	4	4	4	4
	Industrial, MWp	35	35	35	35	35	2	2	2	2	2
Sum, MWp		90	90	90	90	90	10	10	10	10	10
Total, MWp		**450**					**50**				

Note: As of 1st Nov 2016

Eligibility

- ✓ Registered consumers of Distribution Licensee in Peninsular Malaysia (TNB*), and Sabah & Labuan (SESB**) only

  Delinquent consumers who have not paid their bills are not eligible to apply for NEM scheme

- ✓ Open to all categories of TNB/SESB consumers under the following tariff:
  - i. Domestic/Residential
  - ii. Commercial (inclusive of government buildings)
  - iii. Industrial
- ✓ The resources for producing electricity shall be from Solar Photovoltaic only.

* Tenaga Nasional Bhd

** Sabah Electricity Sdn Bhd

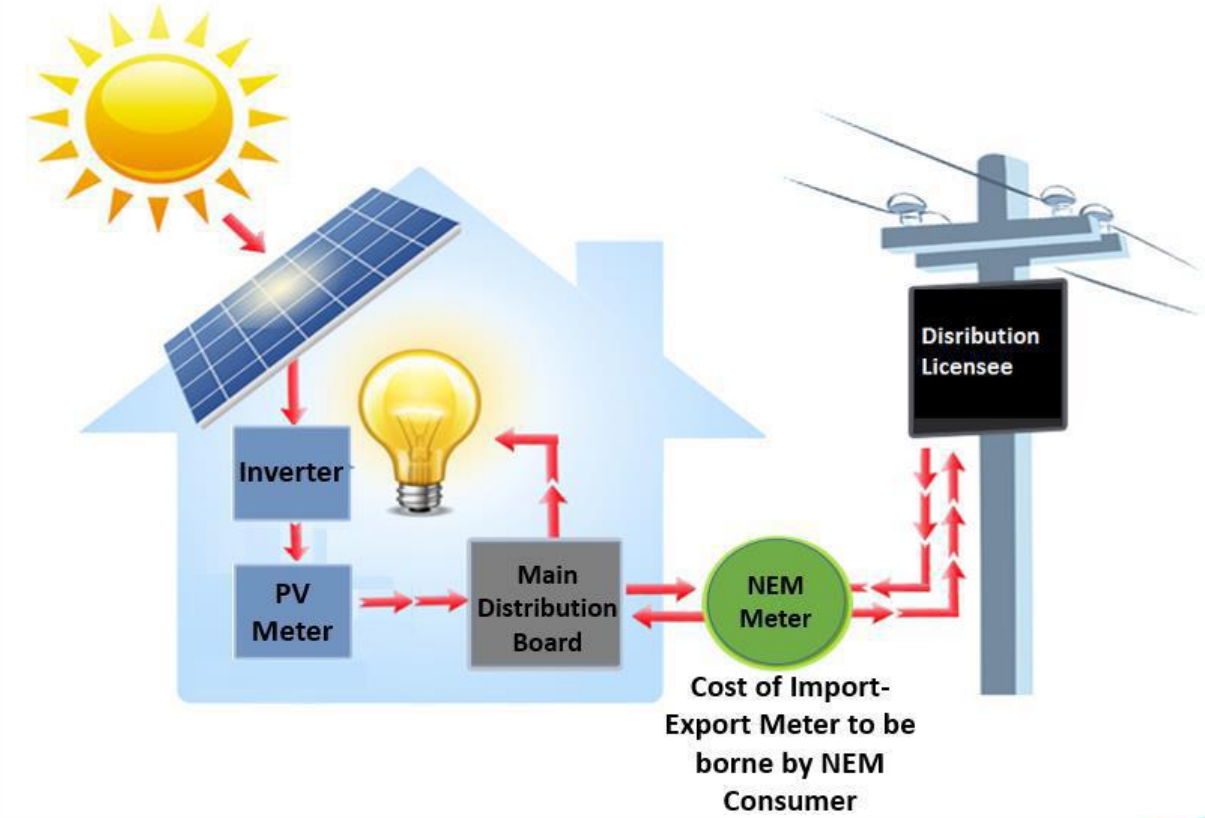
Installation Types and Capacity Limits

- ✓ Installation types:
  - i. on the rooftop of building; and
  - ii. on the garage, car park, and similar buildings

- ✓ Capacity limit:
  - ➢ For domestic or residential consumers, the maximum capacity of the PV system installed is ≤ 12 kWp for single phase or 72 kWp for 3 phase systems
  - ➢ For commercial and industrial consumers, the maximum capacity of the PV system installed shall be 1 MWp or 75% of maximum demand or 60% of fuse rating or 60% of current transformer (whichever is lower)

Connection Type

- ✓ The connection to the DL's (TNB/SESB) network shall be done only through indirect connection, i.e. within the owner's internal distribution board only



The diagram of the connection between the consumer's solar PV system and the DL distribution system

Excess Energy

The credit (excess energy) to NEM consumer will be based on prevailing Displaced Cost for the relevant supply voltage level at the Point of Common Coupling. The calculation for the net billing of electricity will be based on the following calculation:

- ✓ Net billing = **[Energy Consumed from DL (kWh) x Gazetted Tariff] – [Energy Exported to DL (kWh) x Displaced Cost]**

- ✓ The net billing or credit shall be allowed to roll over for a maximum of 24 months. Any available credits after 24 months will be forfeited.

NEM Assessment Study

NEM Assessment Study (NEMAS) report is required prior to NEM application to SEDA Malaysia. The study shall be conducted by the relevant distribution licensee (TNB or SESB). The requirement is based on kWp of installation as below:

Installed Capacity	Study Required	Fee of Study (RM)
1 – 12 kWp	No	-
> 12 kWp – 180 kWp	Yes	1,000.00
> 180 kWp – 425 kWp	Yes	5,000.00
> 425 kWp – 1 MWp	Yes	8,000.00

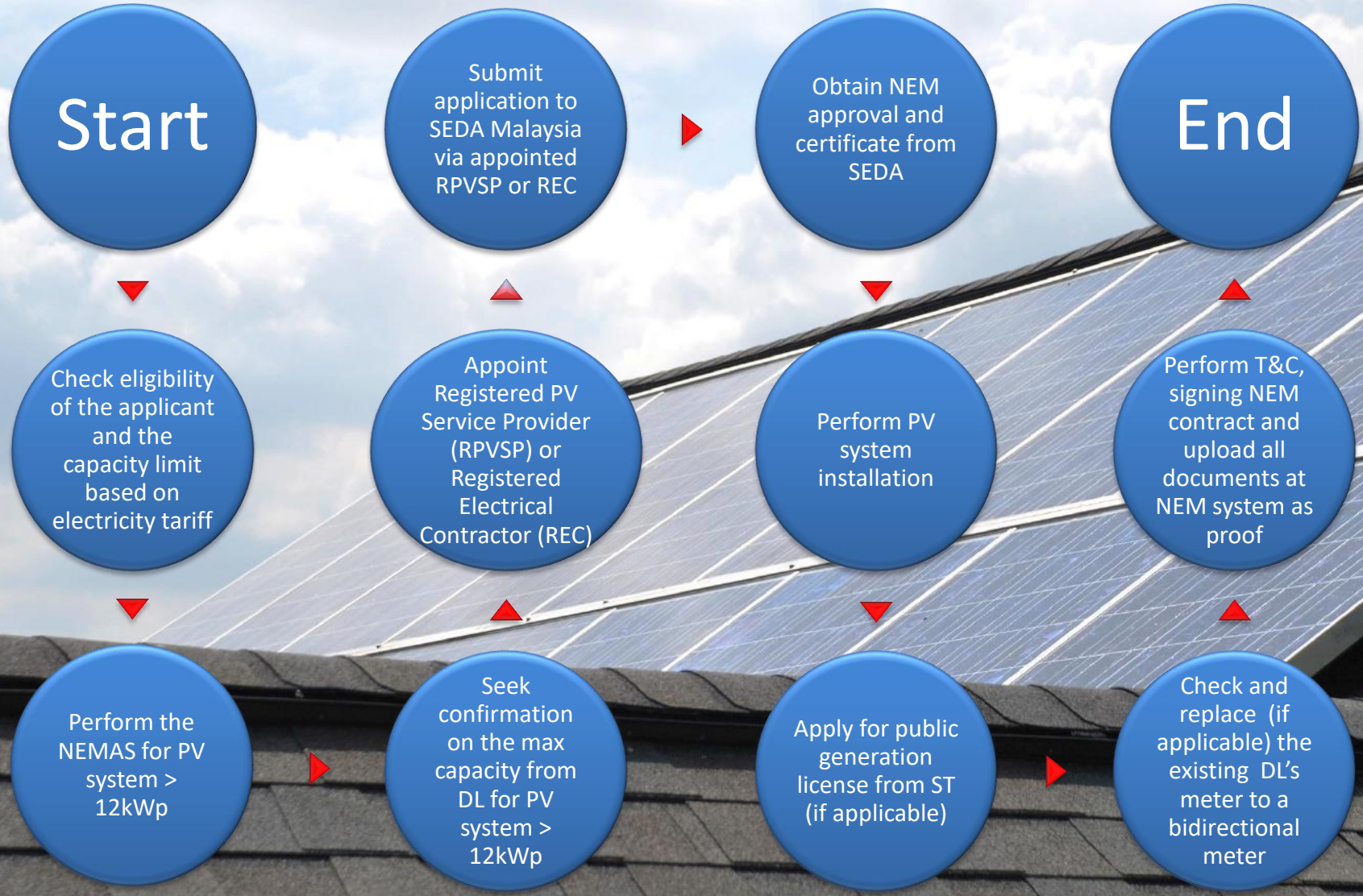
NEM Assessment Study

Please contact:

TENAGA NASIONAL BERHAD (TNB)
Mr. Sansubari Che Mud
03 - 7967 9346 / 019 - 959 7745 or email Sansubari@tnb.com.my
Sustainable Energy Development
Tenaga Nasional Berhad
No. 129, Jalan Bangsar
59200 Kuala Lumpur

SABAH ELECTRICITY SDN. BHD. (SESB)
Mr. Terrence John Kouju
088 - 282 478 or email terrencek@sesb.com.my
Chief Engineer
Sustainable Energy Development,
Asset Development,
6th Floor, Wisma SESB,
Jalan Tunku Abdul Rahman,
88673 Kota Kinabalu,
Sabah

How to Apply?


Start
Check eligibility of the applicant and the capacity limit based on electricity tariff
Perform the NEMAS for PV system > 12kWp
Seek confirmation on the max capacity from DL for PV system > 12kWp
Appoint Registered PV Service Provider (RPVSP) or Registered Electrical Contractor (REC)
Submit application to SEDA Malaysia via appointed RPVSP or REC
Obtain NEM approval and certificate from SEDA
Perform PV system installation
Apply for public generation license from ST (if applicable)
Check and replace (if applicable) the existing DL's meter to a bidirectional meter
Perform T&C, signing NEM contract and upload all documents at NEM system as proof
End

How to Apply?

Documents to be submitted by the Applicant:

i. NEM Application Form (**Form A**) or via online system https://services.seda.gov.my/nem
ii. Design of installation and Single Line Diagram (SLD) endorsed by relevant Competent Person under Electricity Regulations 1994
iii. The latest THREE (3) months of electricity bills
iv. NEM Assessment Study (for application > 12 kW)
v. Maximum Demand, fuse or CT rating (if applicable), endorsed by Professional Engineer or Wireman

The NEM Application Form shall be accompanied with information as stipulated in Form A:

a) Applicant's Profile (Individual/Company/Other Entities)
b) Information of project
c) Technical information
d) Proposed work plan

Things You Need to Know

✓ **NEM Application**

Application can be made either by Registered PV Service Providers or ST's Registered Electrical Contractors via online at SEDA's portal

✓ **Verification and approval**

NEM application shall be processed by SEDA within 30 days from the date of complete submission. NEM certificate will be issued to the successful applicants.

✓ **Application fee**

The application fee for NEM scheme shall be at a rate of RM10/kWp during application. The fee paid is not refundable even if the application is unsuccessful.

Things You Need to Know (cont.)

✓ **NEM meter**

TNB/SESB's existing meter shall be bi-directional (with import-export feature). The replacement (if required) shall be borne by NEM consumer.

✓ **Insurance**

The NEM consumers shall obtain an insurance to cover their PV Solar Installation from fire.

✓ **Goods and Services Tax (GST)**

Each energy exported to the grid under the NEM scheme is subjected to GST and if NEM consumer is a GST-registered person or company, he/she shall invoice the DL for the electricity exported to the grid. The calculation of tax involved for the exported energy will be based on the following calculation:

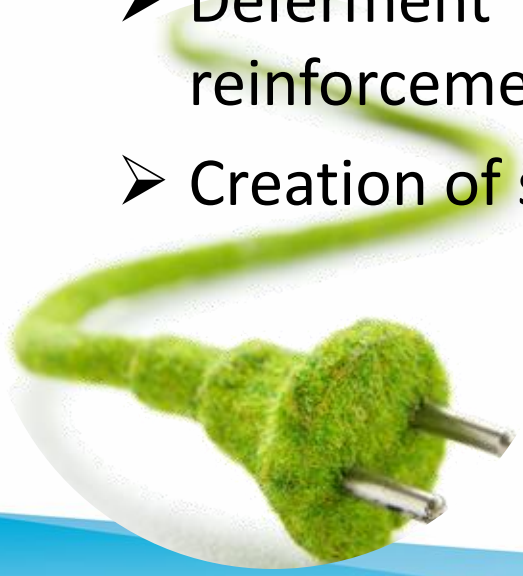
Invoice to DL = **Energy Exported to DL (kWh) x Displaced Cost x 6% GST**

What are the benefits of NEM to the consumers?

- Encourage consumers to play an active role in renewable energy (RE) generation, which addresses climate agenda and national energy security
- Reduction in greenhouse gas emissions
- Hedge against any possibility of future electricity tariff increase
- Availability of power for consumer during grid failure (if energy storage system is incorporated)

What are the benefits to the utility and country?

- Reduction in utility peak demand which coincides with the PV generation profile
  - Avoid/reduce running expensive distillate and open cycle gas turbine plants
- Reduction in distribution system losses
- Deferment of distribution and transmission system reinforcement investments
- Creation of solar PV industry and economy



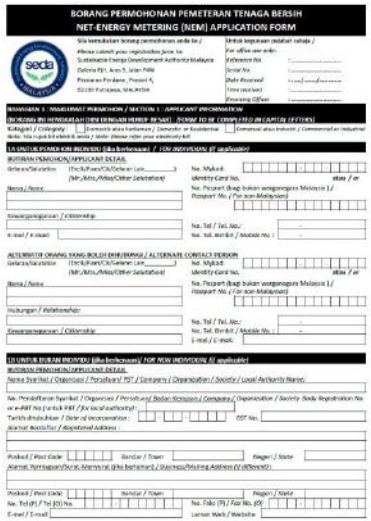
NEM Online System: Documents and Download

www.seda.gov.my → Net metering

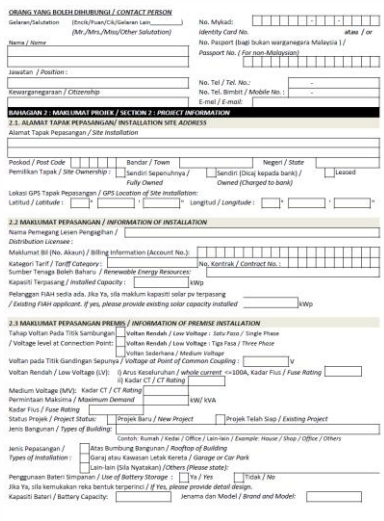
- NEM guidelines
- Manual application form (or online application)
- NEM contract
  - Domestic/residential
  - Non-domestic (commercial & industrial)
- Technical guideline for connection of indirect solar PV under NEM scheme

Application Form

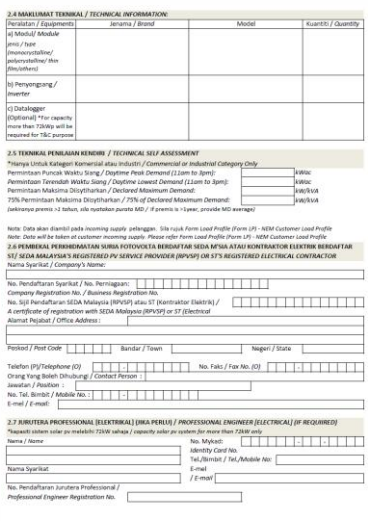
Form A (NEM Application Form)



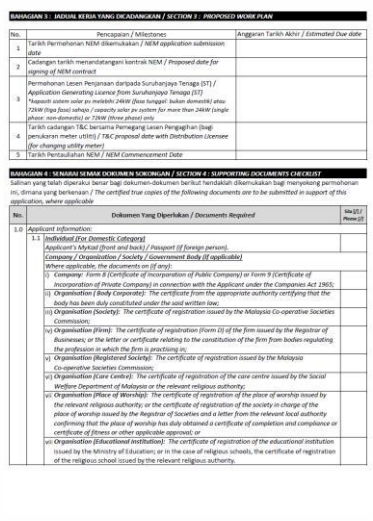
BORANG PERMOHONAN PEMETERAN TENAGA BERSIH
NET-ENERGY METERING (NEM) APPLICATION FORM



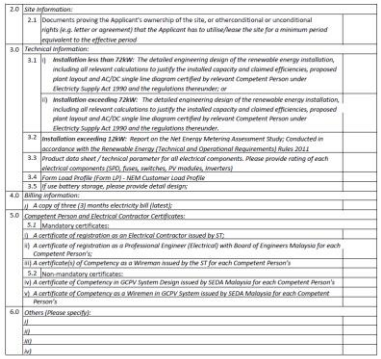
ORANG YANG BOLEH DIHUBUNGI / CONTACT PERSON



2.4 MAKLUMAT TEKNIKAL / TECHNICAL INFORMATION:



BAHAGIAN 3 : JADUAL KERJA YANG DICADANGKAN / SECTION 3 : PROPOSED WORK PLAN



2.0 Site information:

BAHAGIAN 5 : PENGISYTIHARAN BAGI PEMOHON/KAJIAN NEM / SECTION 5 : DECLARATION FOR NEM APPLICATION

*TO BE FILED BY APPLICANT (NON- INDIVIDUAL) [If applicable]

5.2 PENGISYTIHARAN RPVSP ATAU KONTRAKTOR ELEKTRIK / RPVSP OR ELECTRICAL CONTRACTOR DECLARATION

Form of Load Profile

> 12 kW, 4 days (Friday to Monday), together with application form

FORM LOAD PROFILE (FORM LP) - NEM Customer Load Profile

TNB Account Number _____

Customer Name _____

Installation address _____

Service Provider _____

FORECAST OF A TYPICAL DEMAND PROFILE

(Friday to Monday for capacity of >12kW)

Friday				Saturday				Sunday				Monday			
Time	Voltage	Amps	MW	Time	Voltage	Amps	MW	Time	Voltage	Amps	MW	Time	Voltage	Amps	MW
7:00				7:00				7:00				7:00			
8:00				8:00				8:00				8:00			
9:00				9:00				9:00				9:00			
10:00				10:00				10:00				10:00			
11:00				11:00				11:00				11:00			
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18:00				18:00				18:00				18:00			
19:00				19:00				19:00				19:00			
20:00				20:00				20:00				20:00			
21:00				21:00				21:00				21:00			

Note: Voltage (V) and Current (Amps) must be taken at customer incoming supply

Data taken by:

Signature

Name

NEM Billing

BIL ELEKTRIK DAN INVOIS CUKAI

TENAGA NASIONAL
Better. Brighter.

No. Akaun : 1510 00129055 01
No. Kontrak : 131429
Deposit : RM500.00
No. Invois Cukai : 206129820

NEM CUSTOMER
12, JLN PING PONG
SEKSYEN 20
40100 SHAH ALAM SELANGOR

SAMPLE

TNBCare line
1 300 88 5454 (Pertanyaan bil & akaun)
15454 (Gangguan bekalan)
tnbcareline@tnb.com.my
www.tnb.com.my
www.facebook.com/tnbcareline

Jumlah Perlu Dibayar RM 265.80 | **Tarikh Bil : 04.03.2016** | **Bil OPC - NEM**

		Amaun	Bayar Sebelum
Tunggakan	RM	-	
Caj Semasa	RM	265.82	04.04.2016
Penggenapan	RM	-0.02	
Jumlah Bil	**RM**	**265.80**	

Bil Terdahulu (02.02.2016)	RM	389.50	Bayaran Akhir (20.02.2016)	RM	389.50

Jenis Bacaan : **Bacaan Sebenar**

Tempoh Bil : 02.02.2016 - 04.03.2016 (31 Hari)
Tariff : A - 13 (Domestik)

Faktor Prorata 1.00000

Blok Tarif (kWh)	Blok Prorata (kWh)	Kadar (RM)	Amaun (RM)
200	200	0.218	43.60
100	100	0.334	33.40
300	300	0.516	154.80
300	274	0.546	149.60
Jumlah	874		381.40

Keterangan		Tidak Kena GST	Kena GST	Jumlah
Kegunaan (kWh Import)	kWh	300	574	874
Kegunaan	RM	77.00	304.40	381.40
ICPT (RM0.0152-)	RM	-4.56	-8.72	-13.28
Kegunaan Bulan Semasa	RM	72.44	295.68	368.12
6% GST (6% x RM295.68)	RM			17.74
KWTBB (1.6%)	RM			6.10
Jumlah Caj Semasa Import	**RM**			**391.96**
kWh Eksport: 500 @ RM0.238	RM		119.00	119.00
6% GST (6% x RM119.00)	RM			7.14
Jumlah Caj Semasa Eksport	**RM**			**126.14**
Jumlah Caj Bersih	**RM**			**265.82**

No Meter	Faktor Meter	Bacaan Meter		Kegunaan	Unit	
		Dahulu	Semasa			
M98044931	1.0000	6719	7593	874	kWh	Import
M98044931	1.0000	4000	4500	500	kWh	Eksport

Untuk maklumat bil dan bayaran terdahulu, sila layari - https://e-services.tnb.com.my/eservices

Untuk pertanyaan, sila hubungi:
TNB Shah Aalm
xxxx
xxxx
xxxx
Tel: 03-xxxxxxxxxx
Fax - 03-xxxxxxxx

Subsidi Bahan Api Dibiayai Kerajaan Persekutuan RM62.15

GST bagi penggunaan domestik 300kWh dan ke bawah berkadar sifar.

KWTBB - Kumpulan Wang Tenaga Boleh Baharu

ICPT - Imbalance Cost Pass Through / Pelepasan Imbangan Kos Penjanaan

TENAGA NASIONAL BERHAD (200866-W)

NEM CUSTOMER
12, JLN PING PONG
SEKSYEN 20
40100 SHAH ALAM SELANGOR

TENAGA NASIONAL
Better. Brighter.

Aras 16, Wisma TNB, No 19, Jalan Timur, 46200 Petaling Jaya, Selangor.
Nombor Pendaftaran GST 001107427328

Thank You

For further enquiries, please contact:

Renewable Energy Technology Division,

SEDA Malaysia
Galeria PjH, Level 9
Jalan P4W, Persiaran Perdana,
Presint 4, 62100 **Putrajaya**

T: +603 – 8870 5832

Likas Square Commercial Centre

Unit 32, Level 1 , Lorong Likas Square,

Jalan Istiadat Likas,

88400 Kota Kinabalu, **Sabah**

Tel: +6088-252101/251462

E: NEM@seda.gov.my

W: www.seda.gov.my