



BRIEFING ON THE NEW NEM, INTRODUCTION TO SELF-CONSUMPTION (SELCO) AND RPVI DIRECTORY APPLICATION

18th Mac 2019

MARRIOT HOTEL, PUTRAJAYA

Azah Ahmad

Director of Renewable Energy Technology (RET) Division
Sustainable Energy Development Authority (SEDA) Malaysia



NEM Implementation



Regulator



Implementing Agency



Distribution Licensee

NEM Participants



CONCEPT OF NEM

The concept of NEM is that the energy produced from the installed solar PV system will be consumed first, and any excess will be exported to TNB on a "one-on-one" offset basis. This scheme is applicable to all domestic, commercial, industrial and agricultural sectors as long as they are the customers of TNB. The PV systems can be installed at available rooftops or car porch within their own premises.



NEM Calculation

$$\text{Net Charge Amount (RM)} = (\text{Energy Imported from Distribution Licensee}^* \times \text{Gazetted Tariff}) - (\text{Energy Exported to Distribution Licensee} \times \text{Gazetted Tariff})$$

*Energy imported is subjected to SST, KWTBB, ICPT, where applicable

NEW NEM

The new NEM mechanism has been improved by adopting the true net energy metering concept, allowing excess solar PV generated energy to be exported back to the grid on a one-on-one offset basis.

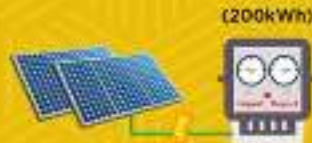


Home with solar PV

500kWh x Gazetted Tariff = RM 160.20

Import x Gazetted Tariff

Block Tariff (kWh)	Profile (kWh)	Rate (RM/kWh)	Amount (RM)
First 200	200	0.216	43.20
Next 100	100	0.334	33.40
Next 200	200	0.516	103.20
Next 300	0	0.546	0.00
Total	500		160.20

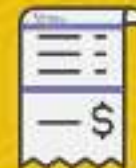


Excess Energy Export to TNB (Solar PV)

200kWh x Gazetted Tariff = RM 103.20

Block Tariff (kWh)	Profile (kWh)	Rate (RM/kWh)	Amount (RM)
First 200	0	0.216	0
Next 100	0	0.334	0
Next 200	200	0.516	103.20
Next 300	0	0.546	0.00
Total	500		103.20

Export Charges are charged in descending order (start from the highest applicable rate)



Bill : RM 77.00

Note: 1 kWh exported to the grid will be offset against 1kWh consumed from the grid with the gazetted tariff. The export charges are charged in descending order (start from the highest tariff rate charged on the applicable month)



NEM Statistic: Approved & Commissioned as of Feb 2019

Approved and NEM Commencement Date (NEMCD)

Category (Peninsular Malaysia)	Approved		NEM Commencement Date (NEMCD) (Completed)	
	Installed Capacity (kWp)	No. of Applications	Installed Capacity (kWp)	No. of Applications
Domestic	2,747.48	391	1,328.64	179
Commercial	11,139.10	143	3,616.63	55
Industrial	20,639.60	87	4,931.48	26
Total	34,526.18	621	9,876.75	260

Note:

1. Implementations - 12 months from approval.
2. NEMCD- contract signed, a copy to SEDA, to upload in the e-NEM system.



NEM Available Quota

- ✓ Quota allocation will be based on **first-come first-served basis**;
- ✓ Quota applied in **MWac**;

Quota Allocation				
Location		Peninsular Malaysia		
Year		2017 - 2020		
		Quota Allocated	*Quota Taken	*Quota Balance
Category of Consumers	Domestic/Residential, MWp	50	3	47
	Agriculture, MWac	450	35	415
	Commercial, MWac			
	Industrial, MWac			
Total, MWp		500	38	462

* As of 13th March 2019



NEM Assessment Study (NEMAS)

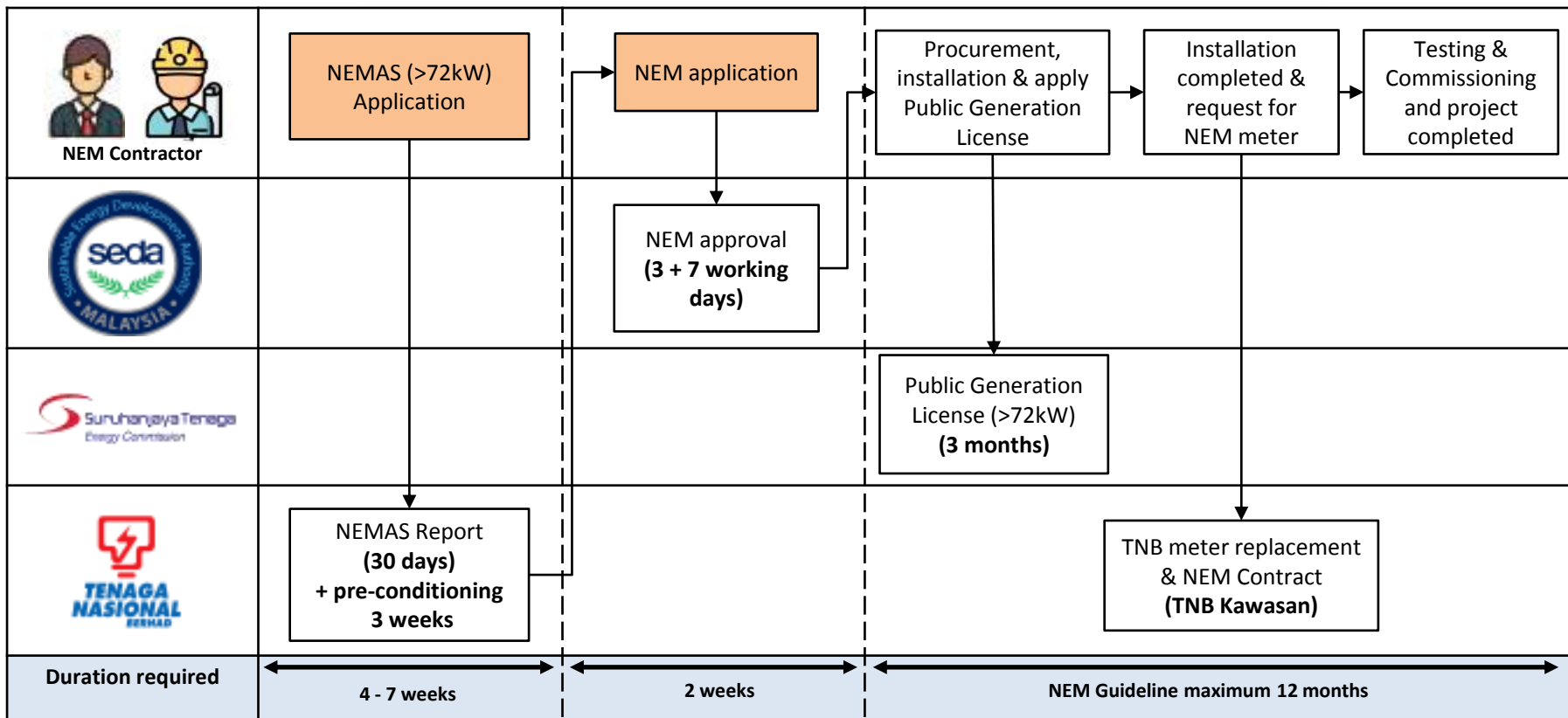
- ✓ NEM Assessment Study (NEMAS) report is required prior to NEM application to SEDA Malaysia;
- ✓ The studies shall be conducted by TNB or its appointed consultant to establish the technical and safety requirements and determine the feasibility of connection.

Installed Capacity	Study Required	Fee of Study (RM)
1-72 kW	No	-
>72 kW - 180 kW	Yes	RM1,000.00
>180 kW - 425 kW	Yes	RM5,000.00
>425 kW - 1 MW	Yes	RM8,000.00
>1 MW - 2 MW	Yes	RM15,000.00
>2 MW - 5 MW	Yes	RM20,000.00
>5 MW - 10 MW	Yes	RM30,000.00
>10 MW - 30 MW	Yes	RM40,000.00

Note: Study period = 30 days



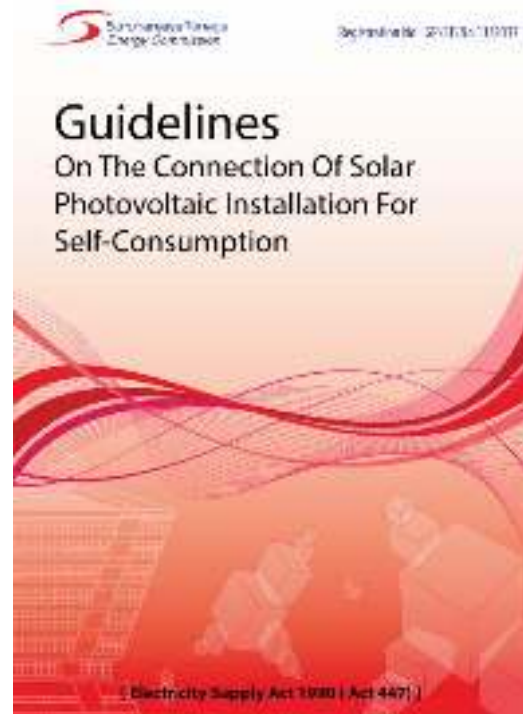
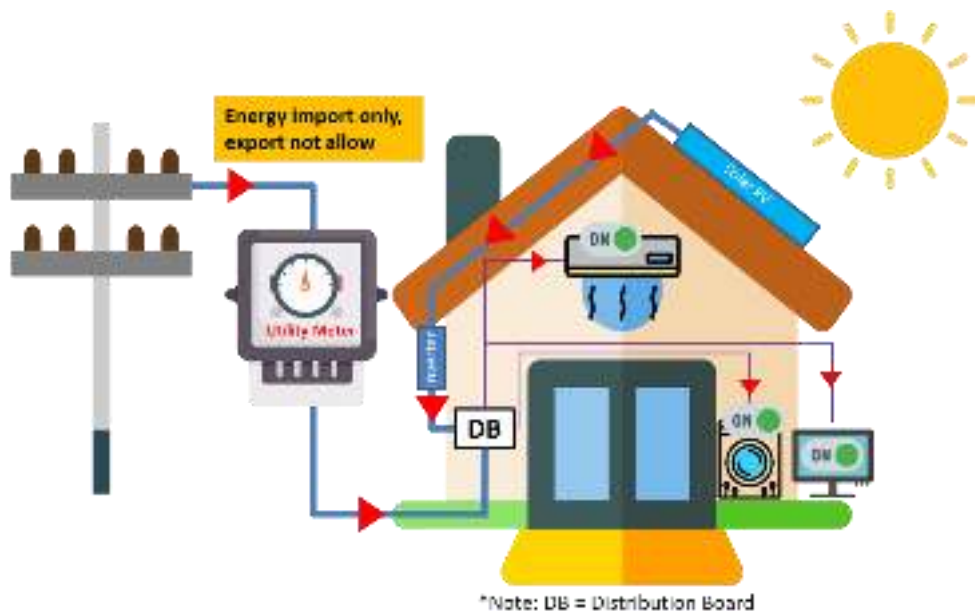
How to Apply? Process Flowchart



Note: NEMAS - NEM Assessment Study

Self-Consumption (SelCo)

- ✓ A mechanism where an eligible consumer installs a solar PV system entirely for own use and in the event of excess of generation, the energy is not allowed to be exported to the grid
- ✓ Issuer of SelCo Guidelines: Suruhanjaya Tenaga





SelCo Requirements

➤ Eligibility

An individual or commercial premise consumer

➤ Capacity Limit

- a) stand-alone system (off-grid) - **no capacity limit**
- b) non-stand-alone system (grid-connected) - less than **75% of the maximum demand** of the consumer's existing installation.

➤ Connection Requirements

To ensure there is no electricity generation export to the grid. Clause 4.7 : *“For self-consumption purposes, the consumer and registered Electrical Contractor are responsible to ensure there is no electricity generation export to the grid..”*

➤ Power System Study (PSS)

Power System Study (PSS) for the solar PV system with a capacity of **425 kWp and above**.

➤ Registration of the Installation with the Distribution Licensee

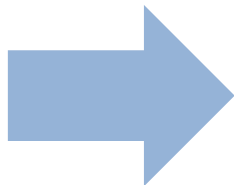
The consumer of the solar PV system is required to **register the installation with the DL**

➤ Licensing requirements

For solar PV system installation above 24kW for single phase and 72kW for three phase, any person who uses, works or operates the installation shall **require a license**.



REGISTERED SOLAR PV INVESTOR (RPVI)



**REGISTERED SOLAR PV
INVESTOR (RPVI)**

Any investors who provide **Solar Power Purchase Agreement (PPA)** or **Solar Leasing** services to NEM customers

SEDA Malaysia Portal



RPVI Directory :

- Open from 2nd January 2019
- Hosted & managed by SEDA Malaysia
- A pool of both local and foreign investors be registered to provide/serve as a reference to interested buyers/clients.
- Serve as a checking mechanism in terms of foreign participation in the NEM programme.
- Total approved : 20 RPVIs (as of 18 Mac 2019)



RPVI Requirements



Foreign Company

Local Company

solar PV projects of above 250kW only

solar PV projects of all Capacity

- Companies must be incorporated in Malaysia;
- Minimum paid-up capital of at least **RM10 million**;
- minimum 80% of local employment (based on company's organization chart)
- has 100% local Engineering, Procurement and Construction (EPC) by appointing a Registered PV Solar Service Provider with SEDA Malaysia

- Companies must be incorporated in Malaysia;
- minimum paid-up capital of at least **RM1million**;
- Project EPC can be carried out by themselves or awarded to the Registered PV Service Provider (RPVSP) with SEDA Malaysia;
- Companies can be a Registered PV Service Provider with SEDA;

❖ Registration and/or annual fees: USD2,500.00, to be renewed annually

❖ Registration and/or annual fees: RM3,000.00, to be renewed annually

Note; checking mechanism will be conducted during project implementation to ensure compliance failing which, de-listing in the directory



How to Apply? Process Flowchart



Local or Foreign Investor

Check RPVI requirements

Online submission & Terms and Conditions compliance
<https://services.seda.gov.my/rpvi/rpvi/login>



Review and approval process
(RPVI's Committee Meeting)



Monthly meeting

RPVI Certificate & listed in
RPVI Directory



Registration & Annual
Fee payment

RM3,000 (local) and USD2,500 (foreign)



REGISTERED SOLAR PV
INVESTOR (RPVI)



RPVI Business Model

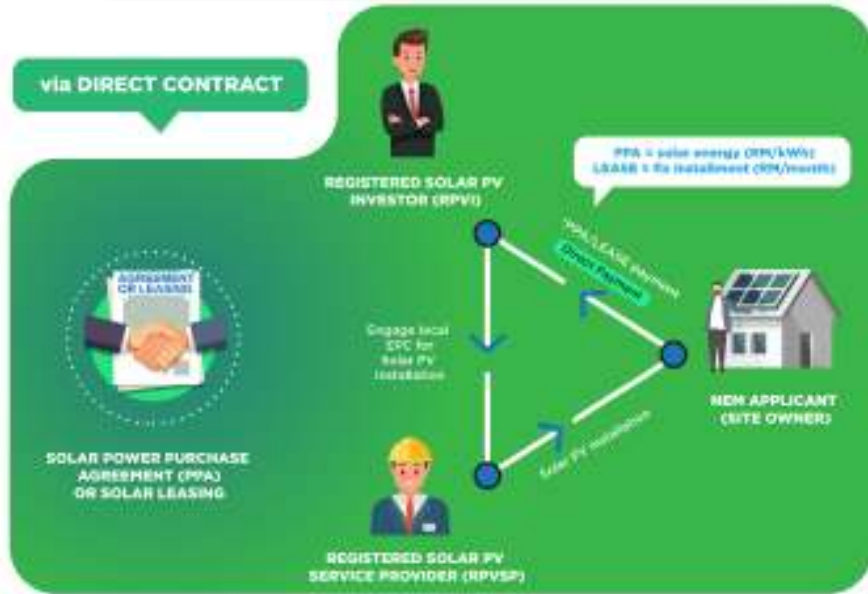
SOLAR POWER PURCHASE AGREEMENT (PPA) OR SOLAR LEASING SERVICES



SOLAR PPA	Payment in Energy (RM/kWh) Customers pay based on per kWh for power generated from PV system
SOLAR LEASING/ HIRE PURCHASE	Fixed Monthly payment (RM) Customers pay a fixed amount monthly in return for the use of the PV system and the system will be owned by consumer after lease period ends

Method of Payment

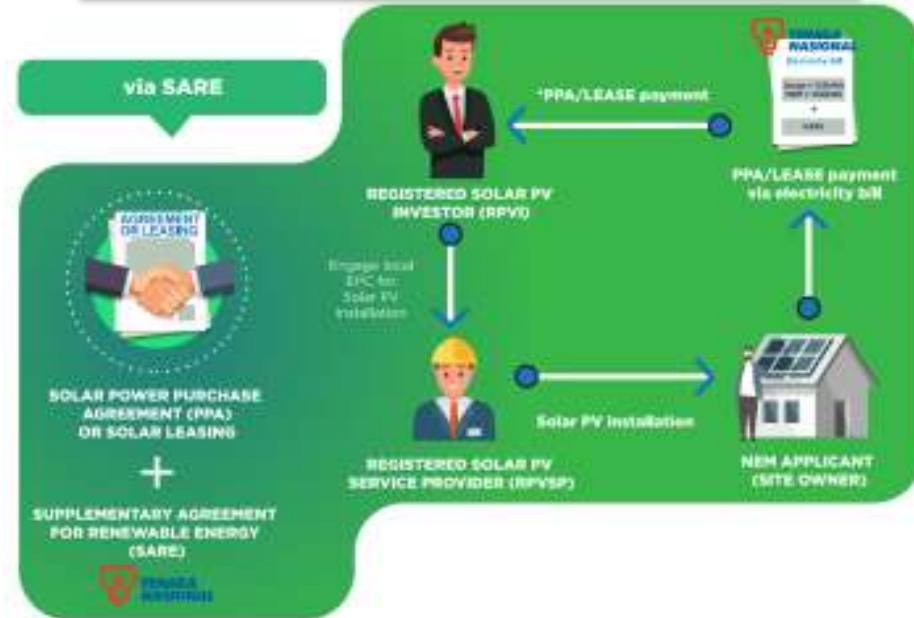
Direct payment with solar investor/lessor



RPVI receive payment from customer directly

Supply Agreement for Renewable Energy (SARE)

OR



TNB does the billing, collection & remittance of payment by customers to RPVI in return for a service fee (2sen/kWh).

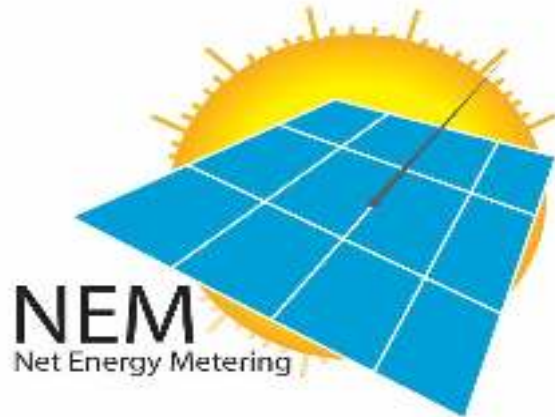
THANK YOU



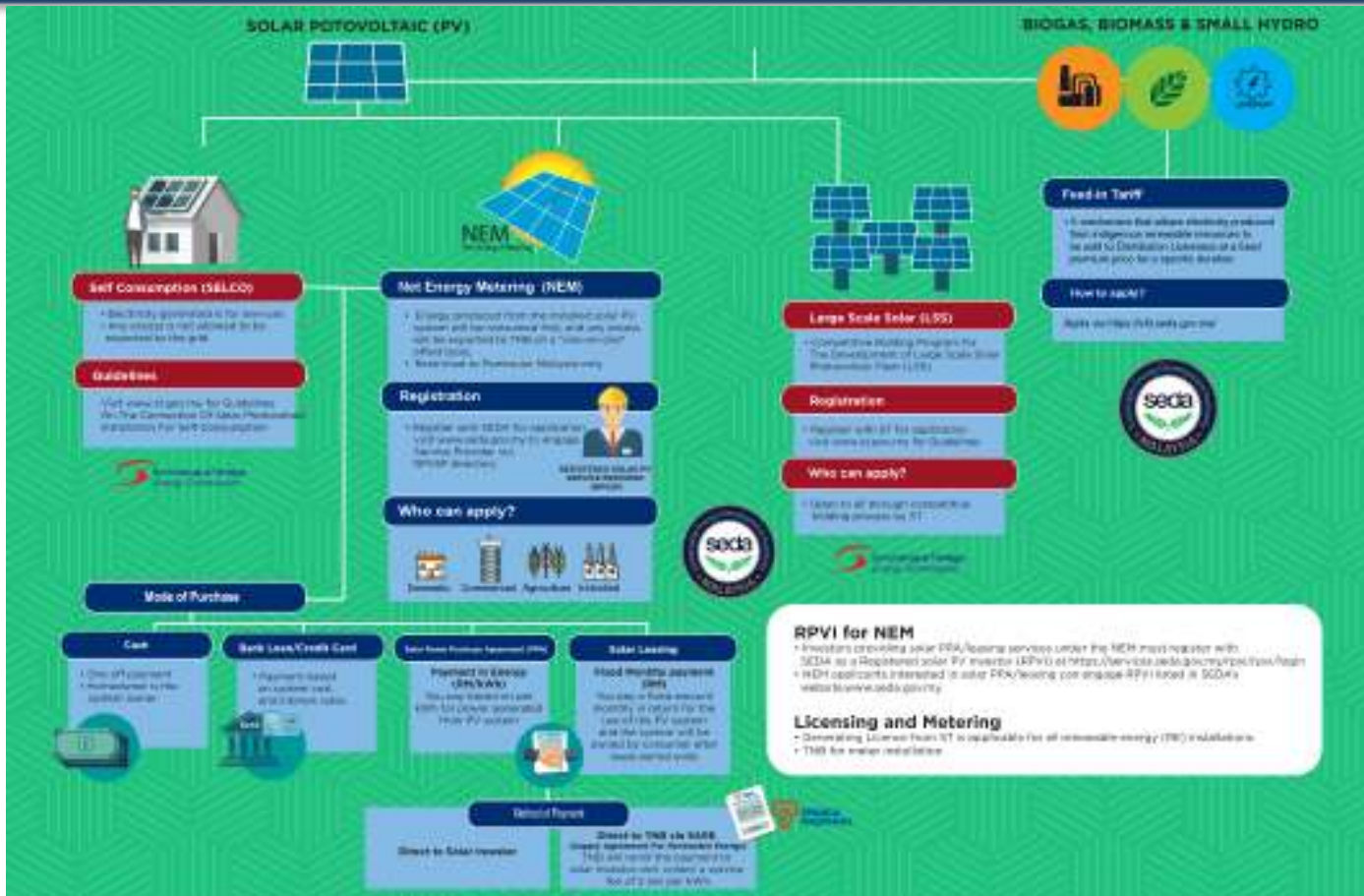
For further enquiries, please contact:

SEDA Malaysia
Galeria PjH, Level 9
Jalan P4W, Persiaran Perdana,
Presint 4, 62100 Putrajaya
T: +603 – 8870 5824

Tel: +6088-252101/251462
E: NEM@seda.gov.my
W: www.seda.gov.my



RENEWABLE ENERGY PROGRAMMES IN MALAYSIA



Purchase Mode via Outright Purchase

CASH, BANK LOAN OR CREDIT CARD



CASH OR
BANK LOAN/CREDIT CARD



RPVSP DIRECTORY



REGISTERED SOLAR PV
SERVICE PROVIDER (RPVSP)



NEM APPLICANT
(SITE OWNER)



Solar PV Installation