

Asia Solar Energy Forum @ ADB ACEF 2015

Opportunities and challenges for PV in the Philippines

Broader regulatory barriers

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Good news for PV: Since 2014 things are moving!

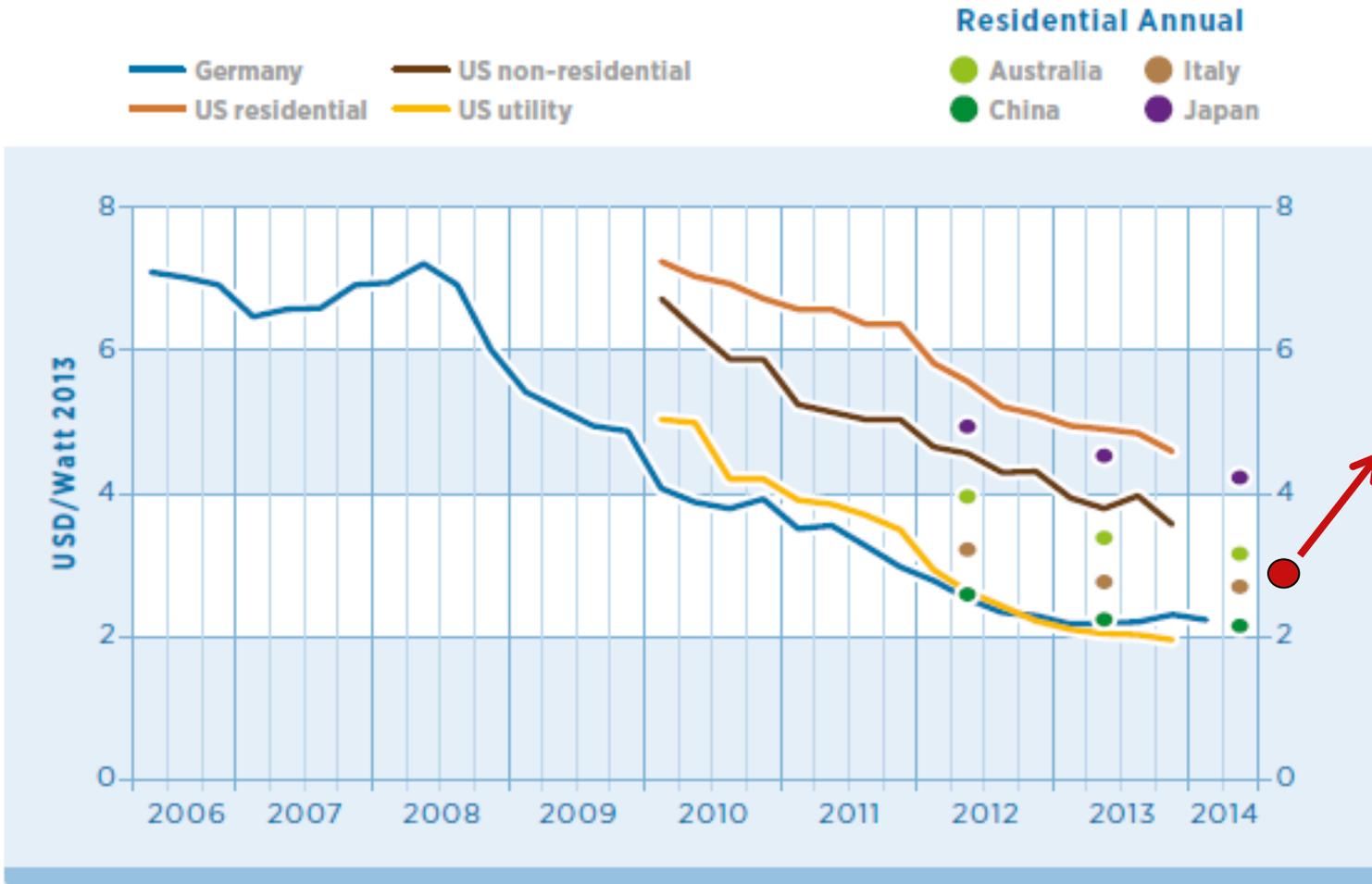
Solar PV markets in the Philippines

Four **major business models** for on-grid PV:

- Net-metering projects (< 100 kW)
- Projects availing the Feed-in Tariff (> 100 kW)
- Power Supply Agreements with Distribution Utilities in On-Grid Areas (PSA)
- Power Supply Agreements with Commercial Bulk Consumers (B2B)



Where are we in terms of PV costs in the Philippines?



Estimated residential PV system price Philippines: **2.7 USD/W** (120K Php/kW)

Net-metering in the Philippines

- Net-metering key incentive mechanism under the RE Act 2008
-> effective since July 2013 -> first in South East Asia
- RE installation up to 100 kW & for customers in on-grid distribution networks only
- Billing: Peso credits for excess electricity will be deducted from electricity bill
- Economic figures:

**Solar PV
costs per kWp
in PHL**

8-9 Php

**Retail rate of
electricity in
kWh**

12 Php

**Savings per
kWh of
avoided retail
rate**

3-4 Php

**Average
generation
rate in kWh**

5-6 Php

Net-metering in the Philippines

- Installation figures

	Number	Capacity (kWp)
MERALCO (Dec 2014)	48	550
VECO (Sep 2014)	3	8
CEBECO III (Sep 2014)	1	3
DLPC (Sep 2014)	1	44
Total	53	605

- Challenge that not all on-grid DUs and Electric Cooperatives are yet fully aware of NM

Feed-in tariff for solar PV in the Philippines

- FiT key incentive mechanism under the RE Act 2008
-> FiT rates approved in July 2012 -> but FiT system only operational since early 2015
- Key parameters for Solar PV

**FiT rate for
Solar PV**

9.68 Php

**New
intstallation
target for solar
PV**

500 MW

**Approved
solar PV
installations**

108.9 MW

**Pending
project
appliactions**

346 MW

- Degression rate 6% after year 1 from effectivity of FIT
- Major challenges First Come – First Serve rule
- No clear market perspective for 2nd phase of FIT

Broader regulatory barriers for on-grid PV

Major phases and milestones in the development of SPV projects in the Philippines based on FIT, PSA or B2B business models

Phase 1: Project Preparation



Renewable Energy Service Contract (RESC)

Issued by DOE



Phase 2: Pre-Development



DOE Confirmation of Commerciality

Linked with conversion of the RESC to development stage



Phase 3: Development



Certificate of Compliance

Issued by ERC



Phase 4: Registration & Connection

MILESTONES	BUSINESS MODELS			
	FIT Direct Negotiation	PSA Competitive Selection	B2B Commercial contracting	Net- metering Application
Project development Phases Milestone Documents/Certificates/Contracts/Agreements				
1. Project preparation				
1.1 RE Application	X	X	X	
1.2 Net-metering application to the DU				X
1.3 RE Service Contract	X	X	X	
1.4 Loan Application	X	X	X	
2. Pre-Development				
2.1 BOI Project Registration	X	X	X	
2.2 NCIP Certificate	X	X	X	
2.3 DENR Environmental Compliance Certificate ¹	X	X	X	
2.4 DENR Permit to Operate	X	X	X	
2.5 DAR Order of Conversion ²	X	X	X	
2.6 LGU Resolution of Support from host barangays	X	X	X	
2.7 LGU Resolution of Support from host municipality, and provincial government	X	X	X	
2.8 LGU Building Permit (submit to the DU)	X	X	X	X
2.9 LGU Electrical Permit (submit to the DU)	X	X	X	X
2.10 Distribution impact study (performed by the DU)				X
2.11 LGU Certificate of final inspection (submit to DU)				X
2.12 DOE Certificate of Confirmation of Commerciality	X	X	X	
3. Development				
3.1 DOE Confirmation of Electromechanical Completion	X	X	X	
3.2 DOE Certificate of Endorsement for FIT Eligibility	X			
3.3 ERC Certificate of Compliance (COC)	X	X	X	X
4. Registration and Connection				
4.1 NGCP/DU Connection Agreement	X	X	X	
4.2 NGCP Transmission Service Agreement	X	X	X	
4.3 NGCP/DU Metering Service Agreement	X	X	X	
4.4 TRANSCO RE Payment Agreement	X			
4.5 Registration to the WESM	X	X	X	
4.6 Registration to the Interim Mindanao Electricity Market IMEM (only in Mindanao which has no WESM)	X			
4.7 DU Power Supply Agreement	X	X		
4.8 ERC Approval of the PSA		X		
4.9 DU Connection agreement	X			X

- Clear though complex administrative procedures in place
- Milestones require numerous steps and sub-steps (permits, documents, licenses)
- Complex permitting procedures may hamper market development
- Administrative barriers affect soft costs components such as capital costs and profit - risk premium!

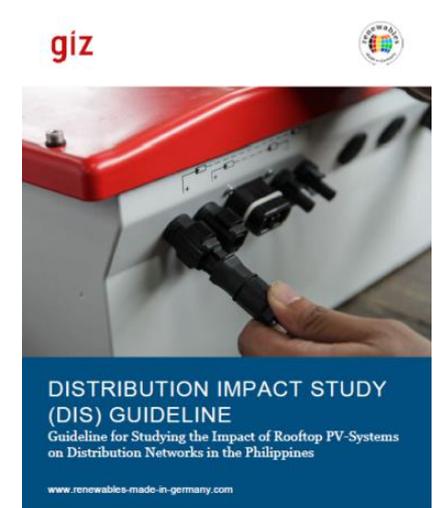
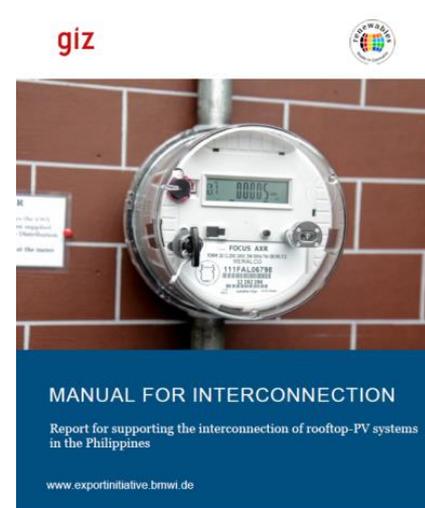
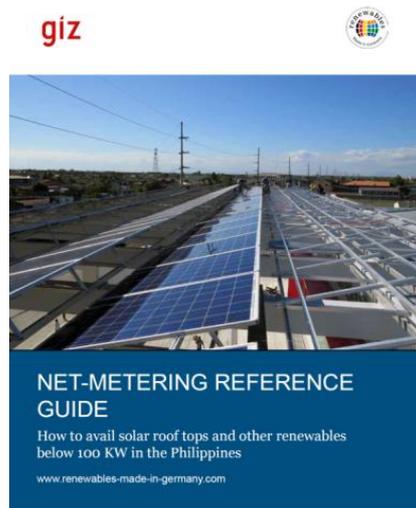
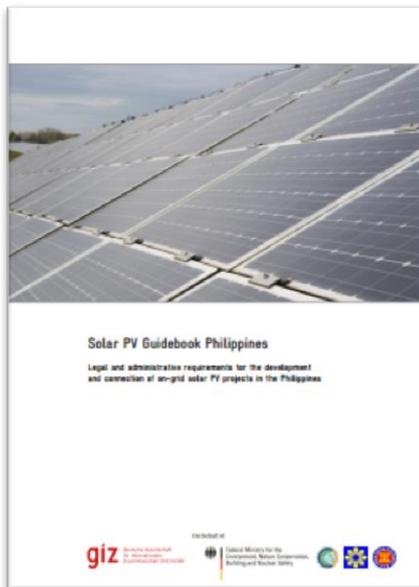
3.1 DOE Confirmation of Electromechanical Completion	
Relevance:	Business Model: <input checked="" type="checkbox"/> FIT <input checked="" type="checkbox"/> PSA <input checked="" type="checkbox"/> B2B <input type="checkbox"/> Net-metering Financing: <input type="checkbox"/> Loan procedure <input type="checkbox"/> Pre-Release <input checked="" type="checkbox"/> Post Release
Description:	The certification issued by DOE that the whole power plant including all substation and other facilities for grid or distribution system connection is in place but not yet connected and the RE project is ready for commissioning.
Legal Ref.:	Section 7 of the RA 9513 or the RE Act of 2008.
Official Ref.:	DOE Website (www.doe.gov.ph), Department Circular No. DC 2013-05-0009
Involved Authority:	Department of Energy, DOE Renewable Energy Management Bureau (REMB)
Applied Procedures:	<ol style="list-style-type: none"> The RE Developer shall inform the DOE that it has attained the Electromechanical Completion. DOE, within 15 working days, shall conduct a site validation and inspection of the project including the interconnection facility. The plant must have at least attained 80% completion based on its approved work plan. DOE shall issue a confirmation or denial within 15 working days
Documents to be submitted:	The RE Developer Letter informing DOE that it has attained the Electromechanical Completion.
Incurred fees:	Actual cost of inspection by the DOE team.
Risks:	Delays on targets due to unavailability of DOE personnel to inspect the facility

3.2 DOE Certificate of Endorsement for FIT Eligibility	
Relevance:	Business Model: <input checked="" type="checkbox"/> FIT <input type="checkbox"/> PSA <input type="checkbox"/> B2B <input type="checkbox"/> Net-metering Financing: <input type="checkbox"/> Loan procedure <input type="checkbox"/> Pre-Release <input checked="" type="checkbox"/> Post Release
Description:	This certification is issue by DOE to a RE project, once the former determined that the plant is ready for the FIT system.
Legal Ref.:	Section 7 of the RA 9513 or the RE Act of 2008.
Official Ref.:	Department of Energy, DOE Renewable Energy Management Bureau (REMB)
Involved Authority:	Department of Energy, DOE Renewable Energy Management Bureau (REMB)
Applied Procedures:	<ol style="list-style-type: none"> In In the event of the DOE confirms Electromechanical Completion of the project, it shall within a period of 5 days from the issuance thereof, nominate the eligibility of the project under the FIT system to the ERC for processing of Certificate of Compliance (COC) provided that the interconnection facility is fully in place. Once it received it confirmation of Electromechanical Completion, the RE Developer shall inform DOE on the date of successful commissioning of the RE plant DOE shall validate this date. In the event the DOE validates the Successful Commissioning, it shall within 15 working days from the date thereof, issue a Certificate of Endorsement for Fit Eligibility to ERC on a first-come-first-serve basis. The COE for Fit Eligibility shall be issued by DOE until the installation cap is fully subscribed.
Documents to be submitted:	Letter from the RE Developer informing DOE on the date of successful commissioning of the RE plant.
Risks:	Delays due to failure of DOE to validate the date of Successful Commissioning Delays due to technical problem/s with interconnection

Summary: key challenges for solar PV

- Complex permitting process and bureaucratic / hierarchical procedures
-> **need for streamlining**
- Many different entities involved on national and local level
-> **need for better coordination / one stop shop**
- FiT only recently fully operational and **uncertainties remain for project financing** regarding the first-come-first-serve rule and future perspective of the market under the FiT
- **Details** get more important, e.g. clearance on zero-rated VAT, market integration and grid management
- For net-metering: **more awareness on DU and costumer site needed**
- Grey area for **own use installations** above 100 kW
- Difficult framework conditions for **RE integration in off-grid areas**, no incentive schemes in place

GIZ Knowledge products on PV in the Philippines



RE Guidelines for South-East Asia www.re-guidelines.info

Electronic Guidebook



- PDF Format
- Printable
- Clickable
- Offline use

Online Platform



- Online access using any web browser
- Easy to update and maintain
- Link to related resources

Thank you very much!

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