



No. R EAP/4-A/NEPRA/2017/

January 12th 2017

The Registrar NEPRA,
NEPRA Tower Attaturk Avenue (East),
Sector G-5/1, Islamabad.

For information & mfa A.
- LA (LH)
C/o to:
- SA (Tech)
- SAT-1
- DG (MSE) - Dir (LH)
- LA (LH) - MIF

17.01.17

Chairman
VC/M(T)
M(LH)
M(CA)

Subject: LETTER OF THANKS FOR COOPERATION IN TRAINING ON
NET METERING PROCESSES AT LESCO

Dear Sir,

1. Kindly refer to your letter No.MTS-04/12 dated 06-01-2017 by which NEPRA extended cooperation in Training of LESCO staff on net metering on 7th January 2017 at Lahore.
2. REAP wishes to put on record the great appreciation for the cooperation by NEPRA and the quality presentation by Ms. Nadia Nabi. She handled the subject professionally and answered the questions elaborately confidently.
3. During the session the LESCO management and trainees were very critical of delays in decisions on pending applications with NEPRA. There were suggestions to devise ways to further reduce the time frame in issuance of license. Some even questioned the very necessity of license.

We must acknowledge that Ms. Nadia Nabi aptly handed the questions and logically presented her reasoning for delays, mostly due to incomplete applications and necessary for license due current legal framework.

REAP has faced this very situation at other independently organized training sessions at other locations REAP is of the view that matter does need further deeper look into it and procedural changes to reduce licensing process time.

REAP recommends the following:

- a. NEPRA may look into ways to reduce process time on its behalf IESCO and I.ESCO have already devised processes that has cut down time at their end to nearly 1/3 as stipulated in SRO.

CHAIRMAN
By No. 305
Date: 19-01-2017

Registrar
By No. ...
Dated ... 17.01.17



The use of single phase inverters, though permitted as per regulations are a bone of contention by IESCO in particular, in spite of recommendations at DCRP meeting NEPRA is requested to give clear decision on the use of single phase inverters.

- a. The agricultural subscribers of DISCOs are not include in the definition of DGs under current scenarios a substantial PV systems are installed as solar tube wells and provinces are offering concessional financing to promote solar tube wells. However, good amount of energy is lost as tube well is not used consistently throughout the year. We recommend that agricultural subscribers may be permitted net metering.
- b. To ensure the consumer rights, quality of equipment and installations, it is proposed that, all the net metering licenses shall be reviewed and issued with the consultation of REAP.

Thanks & Warmest Regards!

ASIF JAH
CHAIRMAN, REAP



Ref/REAP/NEPRA/2017/

January 19th, 2017

The Chairman,
NEPRA,
Ata Turk Avenue
G-5/1, Islamabad.

For information & file.

— Dir (Lic)

— AT (Lic)

— SACTech

— SAT-I — DG (M&E) Co-Chairman

— VC (M&T)

— M (Lic)

— M (CA)

01.02.17

Subject: **SUGGESTIONS/RECOMMENDATIONS ON FURTHER IMPROVEMENT OF NET METERING REGULATIONS**

Dear Sir,

By No. ... 6857

Dated ... 22-1-17

1. On sidelines of training on Net Metering for LESCO staff on 7th January, 2017, Mr. Rasheed Ramay, Chairman REAP Advisory Council also discussed some aspects on the net metering regulations which are dampening the progress. Ms. Nadia Nabi, Legal Advisor NEPRA explained that the document was in evaluation phase and suggested to formally put up views by REAP for consideration at appropriate NEPRA forums.
2. A critical review, suggestion/recommendation by REAP is attached with this letter for your kind consideration.
3. REAP requests that it may be provided an opportunity to discuss the matter in an interactive session at appropriate level at NEPRA for further clarity on the subject.

Thanks & Best Regards!

NEPRA Licensing Division

CHAIRMAN

Diary No.: 6857

Date: 31-01-2017

Registrar

Asif Jah

ASIF JAH,
CHAIRMAN, REAP

Copy forwarded to:

1. The Chairman, FBR, Islamabad.
2. The CEO, AEDB for kind



COMMENTS/PROPOSALS/RECOMMENDATIONS ON NET METERING RULES

Preamble:

1. Renewable & Alternative Energy Association of Pakistan (REAP) appreciates initiative by NEPRA in promulgations of Net Metering Rules dated 1st September 2015. Since then, REAP has received numerous observations from its members regarding negative attitude of DISCOs, difficulties in procedural matters as well as retrogressive clauses contained in the regulations which hinders expected growth. The matter was also discussed with Ms. Nadia Nabi, Legal Advisor NEPRA, on sidelines of training session at LESCO on 7th January, 2017. She explained that the document was in evolution stage and now, having nearly one and half years of implementation experience, it was ripe to receive comments/ proposals for review. REAP has comments and suggestions which are as follows:

The application and its process in general:

2. The application process outlined in documents, on the face of it, recognizes necessity for assessment of technical feasibility by DISCO before installations of DG equipment. However, the information required as per schedule-II, cannot be provided in absence of complete installation. The NOC by Electrical Inspector, though not required at this stage, is demanded by DISCOs. Therefore, practically the installation has to be fully operational before application process can even commence. This creates "what if" dilemmas for prospective DGs which puts them off.
3. The process time by DISCOs, as per regulation, is nearly 90 working days provided everything works as expected. This doesn't include time taken by NEPRA which is currently touching two months. The wait between installation and bi-interconnection could be well over 6 months. This needs patience, with investment lying idle, is a difficult proposition.
4. The organizations that are bulk purchasers and have their own distribution are reluctant to entertain Net Metering. The clear message needs to be conveyed and built into the document.
5. Some of the countries permit grid feed, in certain cases without case to case permission from the regulator. Simple (Pre-approved regulator) one page agreement between DG and DISCOs is sufficient. Sample available with REAP users. Leaving them out has seriously dampened the initiative. Now, with some experience in practical implementation, we can safely allow single phase users. Further, the

practices all over the world favor permissions for single phase users to a limited capacity. We support our views by references to report on international practices.

- a. Status report by sustainable energy authority of Ireland (REAI) on micro generation, defines micro generation as "grid connected electricity generation up to maximum rating of 11KW when connected to three phase distribution grid 400V or 6KW when connected to single phase distribution grid (220V).
- b. Report released by Indian forum of regulators, dated August 2013, lists grid connection scenario for various states at table 4, page 15 as follows:

Table 4 : Connecting Voltage for various capacity ranges - Rooftop Solar

State	Capacity Range	Connecting Voltage
Gujarat (GERC Solar Tariff order 2012)	Up to 6 KW	Single Phase
	8 KW to 100 KW	415 V
	100 KW to 1 MW	11 KV
Tamil Nadu (Tamil Nadu Solar Policy 2012)	Up to 10 KW	240 V
	10 KW to 15 KW	240/415 V
	15 KW to 100 KW	415 V
	> 100 KW	11 KV
Kerala (KERC Discussion Paper 2012)	Up to 6 KW	1 Phase 230 V
	6 KW to 100 KW	3 Phase 415 V
	100 KW to 1 MW	3 Phase 11 KV

Source: State websites, Deloitte Research

- c. The report by Deloitte on Roof Top Solar in Indian dated February 2014 at page 43 lists eligible consumers at various Indian states along with recommendation as follows:

Net Metering

Net-metering Policy & Regulatory review.....(i)

Key Parameters	Current Practice (Policy on net metering order 2012)	Central Issue (Draft Order on net metering 2013)	Recommendation (ALERT 2013, IRECI Low Voltage Policy Order (Dec. 2013) 2014)	World Example (with PV, CI regulations 2010)	Key Enabling IOD Regulation
1. Eligible consumers	Allowed only for 3 Phase service consumers. Single Phase consumers are not eligible	Domestic & Commercial	Systems connected to LT grid	Only for institutional consumers like government departments, academic institutions, etc.	All consumer categories
2. Project capacity limit at consumer level	-	-	1 MW	2-100 kW	2-100 kW (not allowed) Capacity shall not exceed 1 MW
3. Local level limits	Should not exceed 50% of transformer (DTR's) rated capacity	1	-	-	Should not exceed 50% peak capacity of transformer Transformer
4. Third party ownership allowed	-	-	-	-	Allowed entry from perspective of ownership of charges available on third party sale

This indicates the necessity of NOC/License can be done away, without compromising safety, by due process to enact necessary amendment to law.

6. **Recommendations:**

- a. In, our opinion this issue is purely of administrative nature which can be streamlined by mutual consultation at NEPRA and DCRP level. A practical procedure keeping spirit of the document in mind may be evolved in consultation with stake holders from the industry. REAP is willing to extend its services.
- b. A simple one page application for limited capacity with simple agreement with DISCO and possibility of doing away with NOC from electrical inspector and license on case to case basis may be considered.

Specific points about the net metering regulations

7. **Part I (Preliminary)**

As paragraph 1, the rules are rightly named NEPRA **ARE** Distributed Generation/Net Metering rules. However, at paragraph 2.3 and 2.4, the technologies specified for coverage under the rules is **Solar & Wind only**. We fail to understand logic to exclude other ARE sources. Bio Gas gasification and hydro are already well entrenched in the country. Their inclusion would not only expend the base but would also help meet the object at higher pace.

8. **Recommendations:**

We recommend that all **ARE** technologies suitable for DG and those which fall within generation limits be covered (Solar, Wind, Hydro, CHP) (Bio Mass, gasification, geo thermal, land fill gas, sewage gas, mine gas, solar thermal or any type of bio fuel power) or any other sources that fall in the definition of green fuel.

Definition of DG:

9. Para 2 (K) DG has two main components:
 - a. Distribution company's 3 phase 400V or 11KV consumer
 - b. Domestic, Commercial or Industrial user

Comments on type of consumers

10. The logic to exclude agriculture consumers is not clear which excludes potential to capture spare energy from solar tube wells. Solar tube wells are not usually in operation 7/24/360 due to variations in demand of water for crops. It is pity good amount of energy is wasted even when substantial amount of investment has been made. Further provincial governments are making heavy investments in

solar tube wells as well as technology suits the application, harvesting literally free energy would further improve the return on investments to farmers thus contribute to national cause.

11. **RECOMMENDATIONS.**

Agriculture consumers may also be included in approved category of consumers.

COMMENTS ON PERMISSION FOR 3 PHASE USERES ONLY:

12. The permission to three users only has been the most talked about point 8, the various forums. The logic forwarded was mostly relating to learning curve. However, as the majority of consumers in cities, towns or rural areas are single phase.

NOTE: all the references coated above give wealth of information ARE legal frame work and practices that makes the worth referring to for planning purposes for beginners like Pakistan. Copies of references are available with REAP if so desired.

13. **Recommendations:** We recommended that NEPRA may allow the Net Metering to both single phase three phase users in graduated scale as follows.

- a. Domestic/Commercial/(Agricultural): Users with single phase or three phase meters should be permitted to feed on single phase upto limit of their sanctioned load or maximum of 5 KW/Meter.
- b. Domestic/commercial/(agricultural) users 5-100KW of sanctioned load, should be permitted feed 3phase upto limit of their sanctioned load or maximum 100KW/Meter.
- c. industrial users should be permitted 3phase feed only with minimum of 10KW and maximum of 100KW/meter.

Test report by the Electric Inspector:

14. The NOC by the Electric inspector is another uphill task. With no time frame/ guideline for process/ his actions, its free fall, though the application (scheduled-II) does not make certification mandatory, but we understand this is mandatory requirement per current law. REAP suggests to solve the issue by administrative SOP's.

15. **RECOMMENDATION**

- a) Accredited Nongovernmental bodies may also be authorized to issue test/compliance (2 net metering regulations) Report. NEPRA or any other approved agency may award accreditation to entities, after due testing and other criteria, for this purpose. This should form the basis of NOC rather than electrical contractors who are not familiar with net metering requirement.

- b) Quality of installation may be insured by a requirement that only qualified installers, registered with **NEPRA** or **DISCO**, may be authorized. These installers may qualify after passing prescribed training, hands on test and some minimum practical experience with a qualified installer. Such practices are in vogue by western countries.
- c) REAP is ready extend support in generating concept paper/developing criteria/procedures.

General Requirements:

- 16. Paragraph 3, binds express agreement between the two parties but does not binds an overall time frame though the subsequent paragraphs do specify the time frames for individual actions. If we add up maximum time frames of all the strips, it amounts to roughly ninety 90 working days between launching of applications and actual commissioning of DG , provided all actions are completed within allowed maximum time frames. Counting current time frame by NEPRA for its process, which is nearly two months, we safely are talking five to six months. Cognizant of our environments ethics, it appears that commissioning of DG may get delayed abnormally. In our opinion, the time frame between initiation and completion is exorbitant.

RECOMMENDATION

- 17) We suggest reviewing and allowing certain activities to be completed in PARALLEL and also to reduce reaction time for various other activities. We recommend that maximum time between initiations of the request to DISCO and commissioning, including time taken by NEPRA, may be targeted for less than 60 colander days. IESCO and LESCO have devised procedures where they are completing their end within one month. It's NEPRA who needs to look inward.
- 18) REAP has worked out a proposal on timelines which can be shared if desired.

Part II (Application and interconnection process)

- 19) At paragraph 1, it is stipulated that DISCO shall provide information and NEPRA's approved documents to the applicant. The kind of information and documents needs to be specified.
- 20) The maximum time frame provided for completing various actions particularly by DISCO's needs review and time frame reduced including sometime of penalty in case of delay as DG operator would have invested on the equipment,

RECOMMENDATIONS:

- 21) We recommend that time frame between application to NEAPRA and final commissioning should not be more than 60 calendar days.
- 22) There should be a penalty on either side responsible for delaying overall process commencing application to final connection.
- 23) An analysis of exiting time frame and revised proposal is available with REAP which suggests parallel activity and reduces time to less than two months.

Part-III (DG facility design and operating requirement)

- 24) Paragraph 1, provides for agreement for 3 years. This is too short a period. AEDB, at its website estimates payback as 7-8 years, though current local industry standard is 4-5 years.

RECOMMENDATION:

- 25) Minimum period should be 7 years which is safe payback for the investment.
 - a. We recommend that each DISCO may display, including detailed technical specification, a simple practical circuit for the guidance of prospectus DG operators.
 - b. Time frame should be specified for DISCO's approval additional proposals.
- 26) Our experience shows that most of the issues at installation point to poor understanding of the technical aspects by the installers who are generally not trained. Paragraph 1 of part-IV also stipulates approval by DISCO of DG's protection and control diagram. It a one line statement which could be months of delays. Therefore it needs to be addresses more thoroughly.

RECOMMENDATIONS

- 27) We recommend that NEPRA may patronize training of accredited inspectors and installers, REAP is fully equipped and ready to undertake responsibility just to mention, REAP has already organized and successfully conducted two courses on net metering for its members. One for LESCO staff an addition to participation as speakers in seminars in national assembly at Islamabad and PEECA at Lahore.
- 28) NEPRA or any other authorized agency be formally tasked to test the trained inspectors and installers and these trained persons/agencies may only be authorized to carry out these tasks.