

**1**  
***Regulatory Guidelines and Rules  
for  
Development and Operation of  
Small Power Projects (SPP) in  
Tanzania***

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# Outline

- Legislative Framework
- Goals, definitions
- Table of SPP documents
- Tariffs for different SPP cases
  - Main grid, mini grid, wholesale and retail sales
- Required permissions and approvals, procedures for application; process rules

# Legislative Framework

- National Energy Policy, 2003
- Rural electrification policy statement
- Energy and Water Utilities Regulatory Authority Act
  - Establishing EWURA, Commenced Feb, 2006
- Rural Energy Act (2005)
  - Establishing REA & REF
- The Electricity Act, 2008

## Legislative Framework, cont

- ❖ Energy Policy Statement No. 36
  - *Establish norms, codes of practice, guidelines and standards for renewable energy technologies, to facilitate the creation of an enabling environment for sustainable development of renewable energy sources*

## A goal: Light-handed regulation

1. Minimize amount of information that is required.
2. Minimize the number of separate regulatory requirements and decisions.
3. Use standardized documents, and may make use of documents used by other agencies, to the maximum extent possible (reduce need for case-by-case negotiation)

## Definitions

- **DNO (District Network Operator):** the licensee responsible for the operation of a distribution network in Tanzania. (Currently Tanesco, the national electric utility)
- **SPP (Small Power Producer):** a power plant using a renewable energy source or waste heat, or cogeneration of heat and electricity, with an export capacity of up to ten (10) MW
- **Embedded Generator:** a generation station of total export capacity between 100 kW and 10 MW, connected to a DNO at 33 kV or below.

# Table of SPP documents

	Main grid	Mini-grid
<b>Process Guidelines (roadmap)</b>	<i>Guidelines for Developers of Small Power Projects (SPP) in Tanzania (under consultation)</i>	
<b>Process rules</b>	In draft form, under consultation	
<b>Interconnection Guidelines</b>	<i>Guidelines for Grid Interconnection of Small Power Projects in Tanzania (Parts A, B, C) (under consultation)</i>	
<b>Interconnection rules</b>	In draft form, under consultation	
<b>Standardized PPA</b>	✓ <i>Standardized Power Purchase Agreement for Purchase of <b>Grid-Connected</b> Capacity and Associated Electric Energy Between Buyer and a Small Power Project</i>	✓ <i>Standardized Power Purchase Agreement for Purchase of <b>Off-Grid</b> Capacity and Associated Electric Energy Between Buyer and a Small Power Project</i>
<b>Tariff methodology</b>	✓ <i>Standardized Tariff Methodology for the sale of Electricity to the Main Grid in Tanzania Under the Standardized Small Power Purchase Agreements.</i>	✓ <i>Standardized Tariff Methodology for the Sale of Electricity to the Mini-grids Under the Standardized Small Power Purchase Agreements</i>
<b>Tariff calculations for year 2009</b>	✓ <i>Detailed Tariff Calculations under the SPPA for the Main Grid for year 2009</i>	✓ <i>Detailed Tariff Calculations under the SPPA for the Mini-grids for year 2009</i>

## *What are the Guidelines for Developers of Small Power Projects in Tanzania?*

- Audiences: **SPP developers**, EWURA, Tanesco, REA, bankers
- Purpose: Guide to steps necessary to acquire necessary permits and clearances to develop and operate a SPP
  - Selling electricity to the DNO (Tanesco) main grid
  - Selling to an isolated mini-grid and/or
  - Selling directly to retail customers (main grid-connected & isolated SPPs)
- Guidelines: roadmap to rules. There will be a separate rules document.

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## Tariffs determined by SPP type

	<b>Connected to main grid</b>	<b>Connected to isolated mini-grid</b>
<b>Selling wholesale (to DNO*)</b>	Case 1	Case 2
<b>Selling retail (directly to final customers)</b>	Case 3	Case 4

## Tariff Case 1: selling wholesale to main grid

$$C_{case1} = \frac{C_{lrmc} + C_{srmc}}{2}$$

Where  $C_{lrmc}$  is the long run marginal cost as defined by TanESCO's long-term power plan; and  $C_{srmc}$  is the budgeted cost of thermal generation in the next year.

Note: the actual calculations are somewhat more complicated, taking into account:

“ Transmission losses

“ Seasonality

“ Price floor & cap

They are available in: *Standardized Tariff Methodology Under the Standardized Small Power Purchase Agreements* available from EWURA. Order 08-015 on Dec 30.2008

Tariff Case 1 (2009)	Tariff (TZS/kWh)
Annual Average	85.49
Dry season (Aug . Nov)	102.58
Wet season (Jan-Jul and Dec)	75.94

## Tariff Case 2: selling wholesale to a mini-grid

$$C_{case2} = \frac{C_{LmrcGrid} + C_{AveMini}}{2}$$

Mini-grid SPP receives the average of Tanescop's main grid and mini-grid avoided costs.

$C_{LmrcGrid}$  = long run marginal cost for grid-power (adjusted for losses)

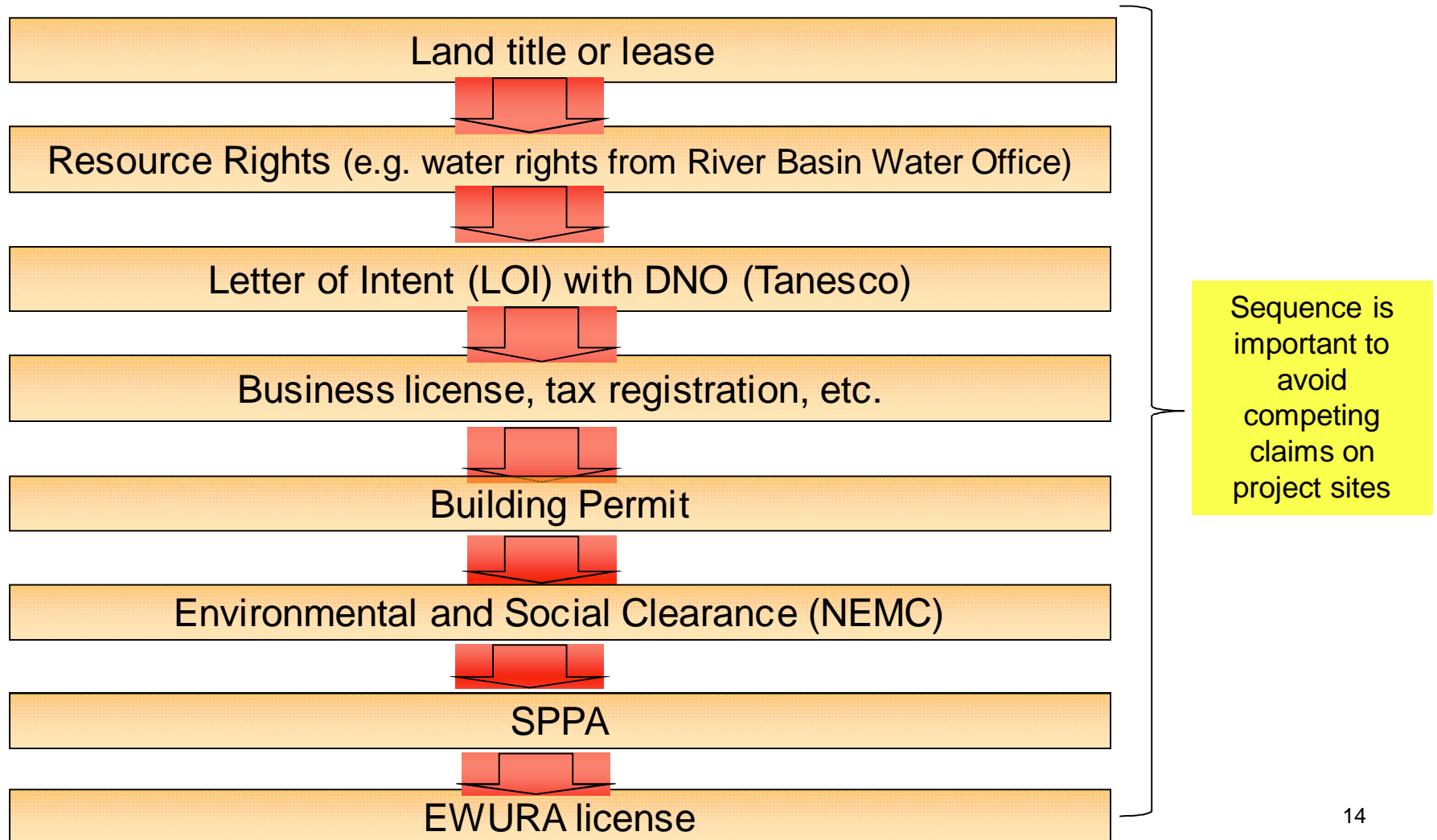
$C_{AveMini}$  = average incremental cost of mini-grid power (levelized cost of electricity from a new mini-grid diesel generator).

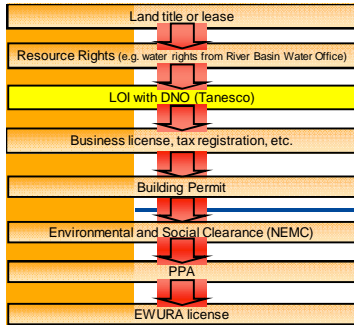
Tariff Case 2 (2009)	Tariff (TZS/kWh)
Tariff (no seasonal variations)	334.83

## Tariff Cases 3 (isolated) and 4 (main grid): selling at retail to end use customers

- Tariff is proposed by SPP generator, subject to EWURA review
  - Less oversight demanded in cases in which community is in agreement with proposed tariff
  - Where possible, EWURA draws on financial analysis submitted to REA for rural electrification subsidy

## Necessary permits, clearances and procedures for application



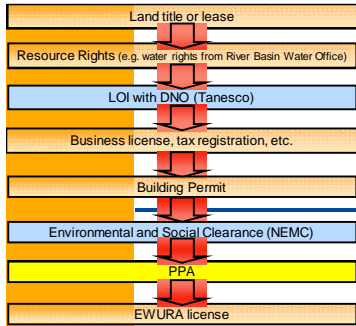


# LOI request to TANESCO

1. Name and Address
2. Locations
3. Fuel type (hydro, biomass, wind, gas, etc.)
4. Power capacity (MW), planned power export (MW), annual energy generation (GWh).
5. Copy of deed of title or lease agreement
6. Rights to resource

## Proposed rules regarding LOI process: response times, cost estimates

- **Acknowledgement of receipt:** *The rules require that within seven days of receiving the LOI request, the DNO will acknowledge receipt of the request.*
- **Notice of decision:** *Within 30 days of receiving the complete LOI request, the DNO will send the project developer notice of its decision.*
- **Reasons for disapproval by DNO stated:** *If DNO disapproves of the project, the reasons for disapproval must be clearly stated in writing.*
- **Reservation of Network Capacity:** *The LOI in the case of sites operating on hydroelectric or wind power, or any other primary source of energy which is site-specific by way of its availability, will also imply the exclusivity of the interconnection to the Developer, within the period of validity of the LOI.*
- **Estimate of interconnection costs:** *Within 30 days of sending the LOI, the DNO shall send the Seller a rough initial estimate of the interconnection costs.*

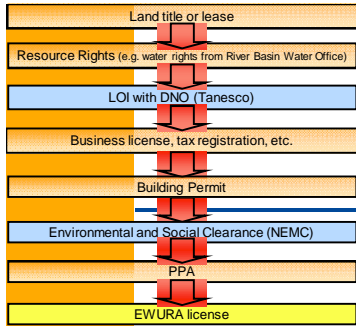


# Standardized Power Purchase Agreement (PPA)

- To initiate the PPA agreement process, the Seller completes and submits to TANESCO an Application for Interconnection and Sale of Electricity+
  - technical engineering information (one-line diagrams, specifications of key equipment) that DNO needs in order to determine if the proposed project is in compliance with the *Interconnection Rules and Guidelines*
  - Includes information submitted in the exchange of information as part of the LOI process.

## Granting/rejecting a PPA based solely on technical considerations

- *The rules specify that the DNO's decision to sign or reject the standardized PPA is based solely on its evaluation of whether the design of the Seller's facility as described in the Appendix 4: Application for Interconnection and Sale of Electricity is in compliance with the %Guide for Grid Interconnection of Embedded Generators to the Main Grid and Isolated Mini-Grids in Tanzania.*



# EWURA license

- SPPs up to 1 MW are exempt from EWURA's licensure requirements
  - Must submit completed registration form
    - Location, business registration, capacity of facility, GWh/yr, date of planned construction
- Non-exempt (>1 MW)
  - Submit license application
    - Same as registration, plus
      - Section on managerial competence
      - Feasibility study
      - Business plan
      - Permits and clearances (NEMC, water rights, etc.)
  - Where possible, EWURA draws on financial analysis submitted to REA for rural electrification subsidy

## Proposed rules related to EWURA license

- *The rules require that EWURA will respond with a license or an explanation of why a license was denied within 45 days. The rules specify that an initial license will be granted for fifteen years. Subsequently, renewed licenses will be granted for fifteen years. All generators are also required to submit, on an annual basis, a completed SPP Annual Reporting Form.*
- The EWURA license application requires a fee of Tsh 100,000 (about US\$75) paid to EWURA.

## Where we are nowí

### ■ Completed

- Tariffs and tariff methodology and Standardized Power Purchase Agreement have all been approved.

### ■ Ongoing

- discussions between EWURA and REA on how to coordinate better, done, but may be refined further.
- application for license for first project has been received

# Thank you

- For more information, please contact [www.ewura.go.tz](http://www.ewura.go.tz)