



Outil de tarification de la production décentralisée (PD)

*Soutien à l'établissement des tarifs de la PD
2 - 5 septembre 2024*

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Aperçu de l'outil de tarification


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Distributed Generation Revenue Impact and Tariff Setting Model for Electricity Utilities

 ESWATINI

Main Menu




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Acknowledgements - Revenue impact model developers and program partners:

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Description de l'outil

En résumé...

- **Cet outil cible les services publics**, bien que d'autres acteurs puissent également s'y intéresser (autorités de régulation, ministères, clients, etc.).
- **Son objectif principal** est d'aider les services publics à fixer les tarifs de la PD en procédant à une vérification croisée de l'incidence sur les recettes.
- **Il comprend 2 modèles :**
 - Modèle 1 : évalue l'impact des différents tarifs de la PD sur les recettes des services publics.
 - Modèle 2 : clarifie l'analyse de rentabilité pour le client de la PD.
 - Veille à ce que les tarifs tiennent compte des intérêts des clients ainsi que ceux des services publics et soutiennent les objectifs de la politique en matière d'énergies renouvelables.

Solaire photovoltaïque uniquement

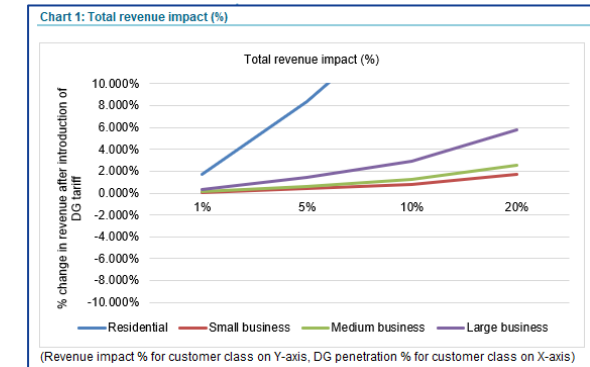


Table 3: Reduction in revenue, Value of Solar and Total effect (\$m)

	Residential	Small business	Medium business	Large business	Total
1% of customers install rooftop PV					
Reduction in revenue (\$m) (A)	-5.9	-0.7	-0.3	-0.1	-7.1
Value of Solar (\$m) (B)	18.6	0.8	0.6	0.2	20.2
Total effect (\$m) (A + B)	12.7	0.1	0.3	0.1	13.1
5% of customers install rooftop PV					
Reduction in revenue (\$m) (A)	-29.4	-3.7	-1.6	-0.7	-35.4
Value of Solar (\$m) (B)	92.8	4.2	2.9	1.1	101.0
Total effect (\$m) (A + B)	63.4	0.5	1.3	0.4	65.6

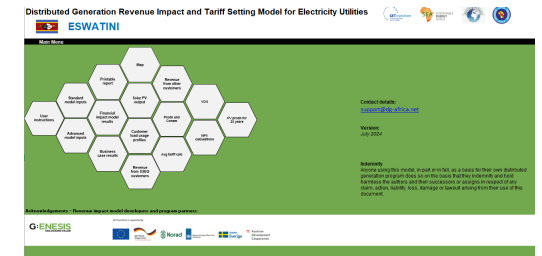
Table 4: Business case for the Solar PV customer for the chosen DG tariffs

	Residential	Small business	Medium business	Large business
Net present value (\$)	10 074	386 155	3 534 003	1 445 839
Pay-back period (PBP) (Years)	18	6	10	8
Internal rate of return	4%	19%	10%	15%
LCOE (\$)	1.18	1.23	1.12	1.06
Monthly bill for one Solar PV customer (\$)	\$ 55	\$ 1 537	\$ 269 545	\$ 10 518

Principes de tarification

L'outil de tarification tient compte de certains principes clés :

- **Suffisance des recettes :**
 - Les services publics doivent recouvrer les recettes nécessaires pour couvrir les coûts engendrés par les clients de la PD.
- **Efficacité économique** (principe de « reflet » des coûts) :
 - Les frais du client doivent refléter les coûts plus un retour sur investissement raisonnable.
- **Équité :**
 - L'acceptabilité sociale est importante. Les frais doivent être raisonnables et défendables.
- **Justice :**
 - Les clients doivent s'acquitter de leur part des coûts, sans « transfert de coûts » vers ceux qui ne relèvent pas de la PD.
- **Simplicité :**
 - Les structures tarifaires doivent être simples pour être comprises par les clients et s'aligner sur les capacités de comptage.



Entrée → Traitement → Sortie

Données d'entrée

- Tarifs actuels
- Coûts d'alimentation électrique en gros
- Ventes aux clients
- Emplacement du site (pour les données solaires)
- Informations sur le système PV et les batteries
- Tarifs proposés pour la PD

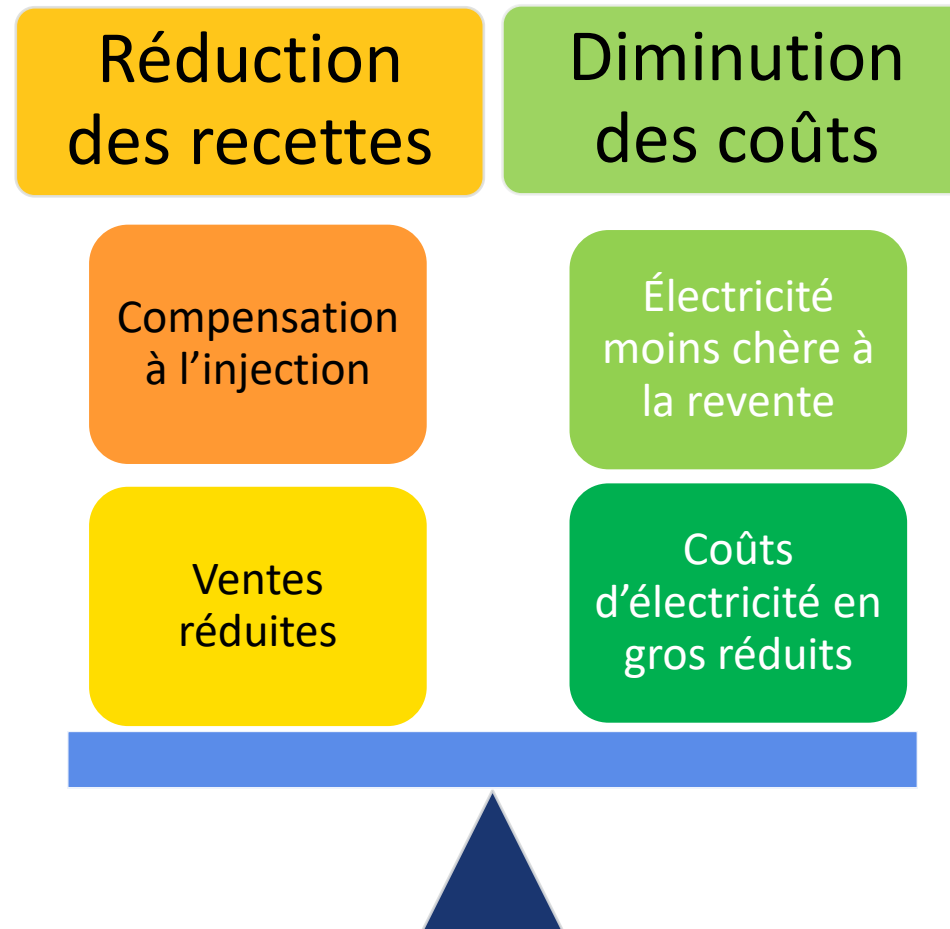
All model inputs are entered on this sheet. Please fill in all the ORANGE highlighted cells.

1	Date of data entry (dd/mm/yyyy)	2020/03/04	2	Name of utility	EEC
3	Country	Kenya	Check the box Use of measurement Residential Small business Medium business Large business		
4	UTILITY TARIFFS This tariff system should reflect the tariff type and magnitude of the tariff that the user wishes to test i.e. customers will shift from ONLY this tariff type to DG tariffs.				
TARIFF SEASONS In a Summer Winter (Summer, Winter) - set the Season names and months in each season (from Advanced/Advanced/Season 2). Default: 2 Seasons.					
Type of tariff: TOD (including Block (BT)) or the Flat Flat TOD TOD					
Do you want to test the TOD Periods (BT Peak, Standard, Peak)? No. Default TOD Periods are defined as: Customer to define peak? Yes. Enter TOD period 1 then 'Maximum/Minimum' value only (overrides the other Consumer types cell entry)					
1. TOD (Standard) / Tariff used: determine tariff below					
Season 1	Fixed monthly charge	KSh		2500.00	1000.00
	Monthly demand charge	KSh/kWh		204.95	204.95
	Peak	KSh/kWh		174.25	453.73
	Standard	KSh/kWh		124.27	800.00
Off-peak	KSh/kWh		80.00	80.00	
Season 2	Fixed monthly charge	KSh		2500.00	1000.00
	Monthly demand charge	KSh/kWh		204.95	204.95
	Peak	KSh/kWh		174.25	452.08
	Standard	KSh/kWh		124.27	550.00
Off-peak	KSh/kWh		80.00	80.00	
Pricing Sheet: Daily (BT) tariff used: determine BT tariffs * For standard tariffs based on consumption in the cell below. * For flat tariffs based on the upper limit cell entry.					
5. Bulk power costs AVERAGE COSTS: These are the bulk power costs for the utility averaged across all power sources - utility own generation plant and imports. Should be weighted according to quantities from different sources.					
Season	Peak	KSh/kWh		82.00	
	Standard	KSh/kWh		52.21	
	Off-peak	KSh/kWh		38.53	
Season	Peak	KSh/kWh		78.50	
	Standard	KSh/kWh		53.71	
	Off-peak	KSh/kWh		39.46	
REGIONAL COSTS: These are the bulk power costs for the utility and DG generation facilities e.g. DG in the network, but not local generation. Should be weighted according to quantities from different sources.					
Season	Peak	KSh/kWh		82.00	
	Standard	KSh/kWh		52.21	
	Off-peak	KSh/kWh		38.53	
Season	Peak	KSh/kWh		78.50	
	Standard	KSh/kWh		53.71	
	Off-peak	KSh/kWh		39.46	
6. Solar PV installation (Optical system sizes in blue)					
Average size of Solar PV installation: Enter the average average size of Solar PV installation for each customer group, in the form of your knowledge. Also provide use the default size which are as follows: Residential: 3 kWp, Small business: 10 kWp, Medium business: 50 kWp, Large business: 700 kWp.					
Cost per kWp: Enter the average price of installation (KSh). Fill information in red boxes when use the hard installation, which are dependent on the size of the Solar PV installation.					
Government incentive subsidy: Enter in the value of the subsidy for installing solar PV, if applicable.					
7. Battery storage installation (Optical battery sizes in blue)					
Do you want to consider create storage for the following customers?					
	Yes/No	No	No	Yes	No

Entrée → Traitement → Sortie

Logique de traitement et d'évaluation

- Réduction des recettes
- ou
- Diminution des coûts
- À prendre en considération :
 - Période d'utilisation
 - Profils de charge
 - Charge/décharge des batteries
 - Révision des prix, etc.



Entrée → Traitement → Sortie

Chart 1: Total revenue impact (%)

Sorties

- **Modèle 1** : Impact global sur les recettes des services publics
- **Modèle 2** : Analyse de rentabilité de la production décentralisée

Total revenue impact (%)

of 10.000%

Table 4: Business case for the Solar PV customer for the chosen DG tariffs


	Residential	Small business	Medium business	Large business
Net present value (\$)	11 982	386 155	4 533 329	1 445 839
Pay-back period (PBP) (Years)	18	6	9	8
Internal rate of return	4%	19%	12%	15%
LCOE (\$)	1.18	1.23	1.12	1.06
Monthly bill for one Solar PV customer (\$)	\$ 50	\$ 1 537	\$ 265 176	\$ 10 518

— Residential — Small business — Medium business — Large business

(Revenue impact % for customer class on Y-axis, DG penetration % for customer class on X-axis)


Démonstration de l'outil...

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Je vous remercie de votre attention

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L'outil est disponible à l'adresse suivante :

<https://dg-africa.net/tariffs-revenue/>

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