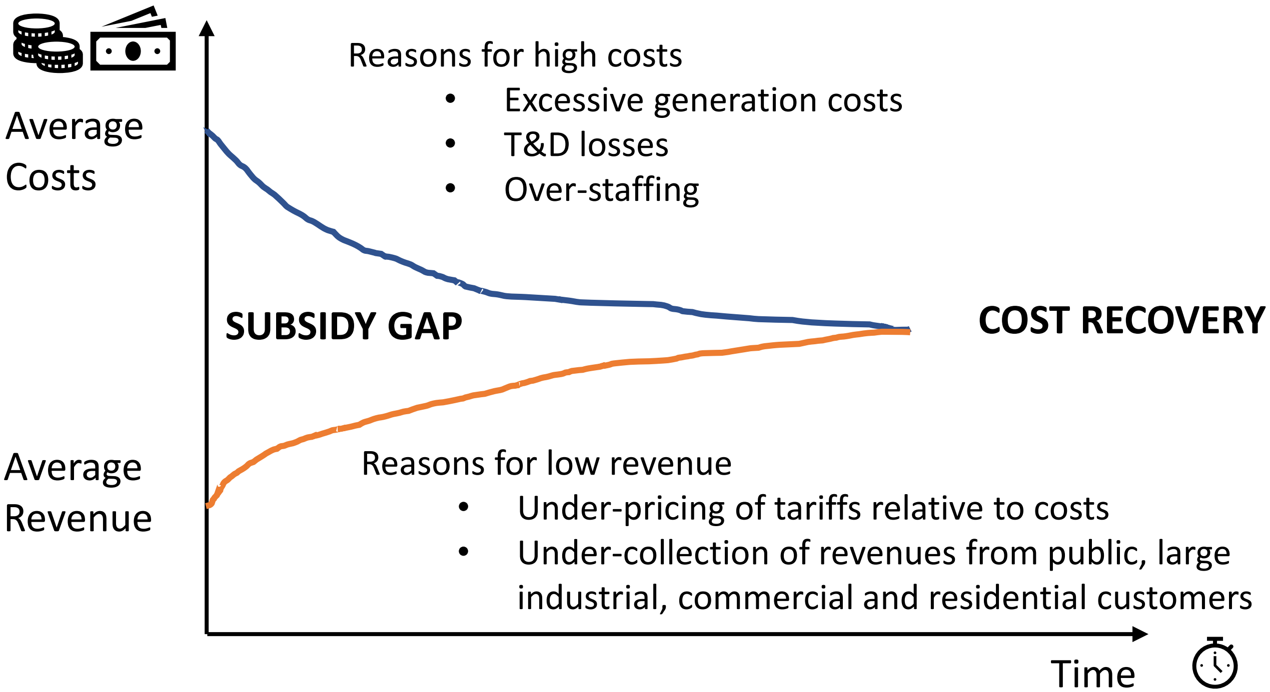
Reforming Electricity Subsidies: An Overview

October 2018

Vivien Foster | Senior Economic Adviser | Washington DC

WORLD BANK GROUP

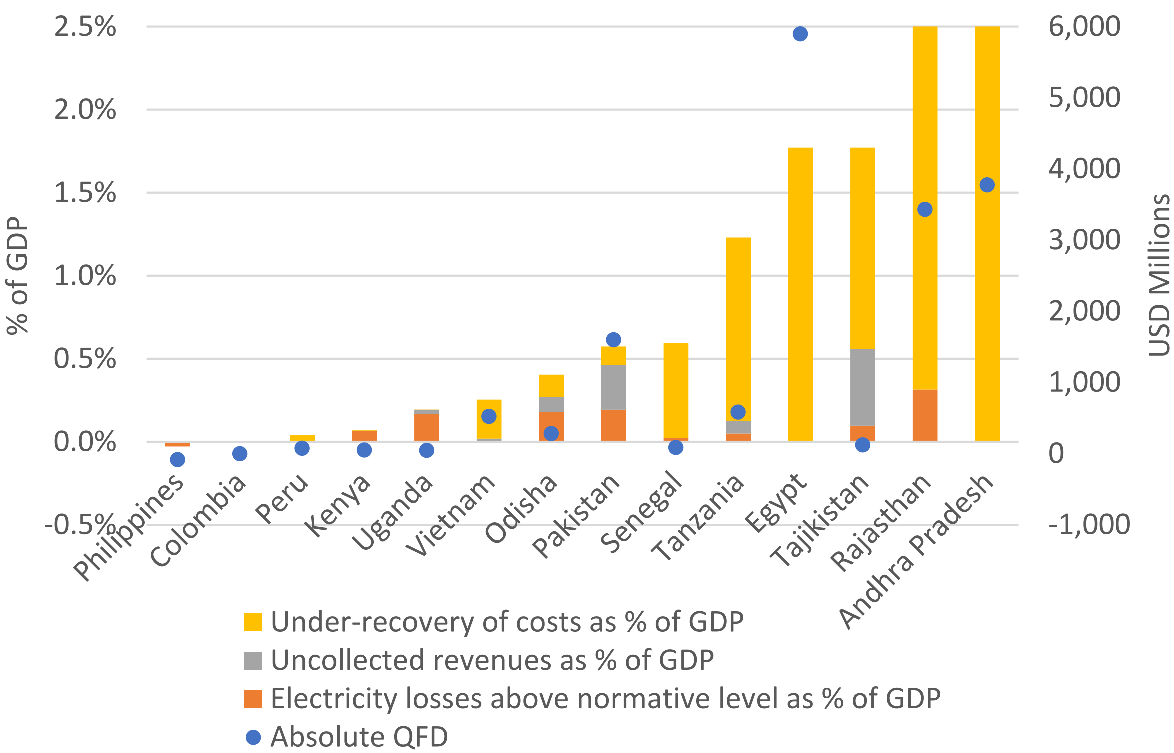
Numerous factors contribute to subsidy gap in electricity services



WORLD BANK GROUP

Under-pricing of electricity remains prevalent across the developing world

Quasi-fiscal deficits remain substantial in some economies driven by under-recovery of costs



- Quasi-fiscal deficit is the difference between the net revenue of an efficient utility and the net cash it collects

- For 38 Sub Saharan African countries, QFD averaged 0.9% of GDP with underpricing the largest component (Kojima and Trimble, 2016)
- Over half of 14 countries in MNA had QFD >4% of GDP; with underpricing accounting for three quarters of QFD in most cases (Camos, 2018)

WORLD BANK GROUP

Source: Rethinking Power Sector Reform, 2019

There are degrees of cost recovery for electricity pricing

LEVEL 1

- Recovers actual OPEX borne by utility

LEVEL 2

- Recovers actual OPEX and limited historic financing costs (debt service) borne by utility

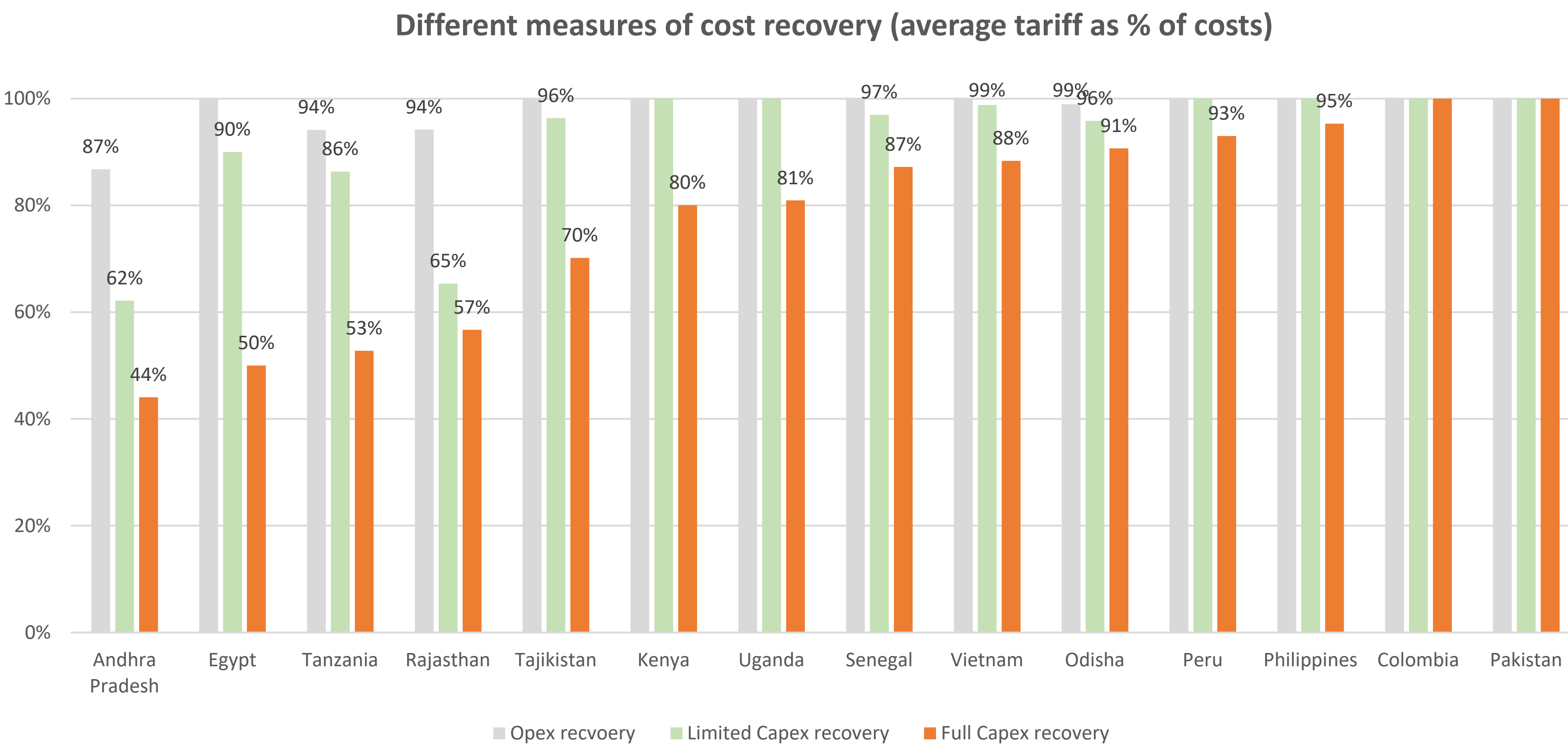
LEVEL 3

- Recovers full OPEX and full CAPEX for historic and planned future investments

Level 1 and 2 do not consider who pays, government may cover some parts of OPEX, and/or provide capital grants or concessional finance

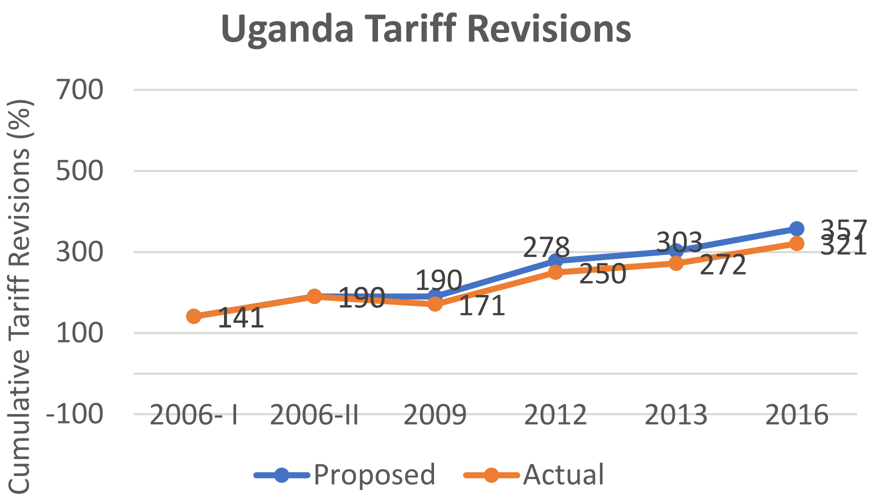
Level 3 requires all cost elements to be covered by the utility as would be required under private sector ownership

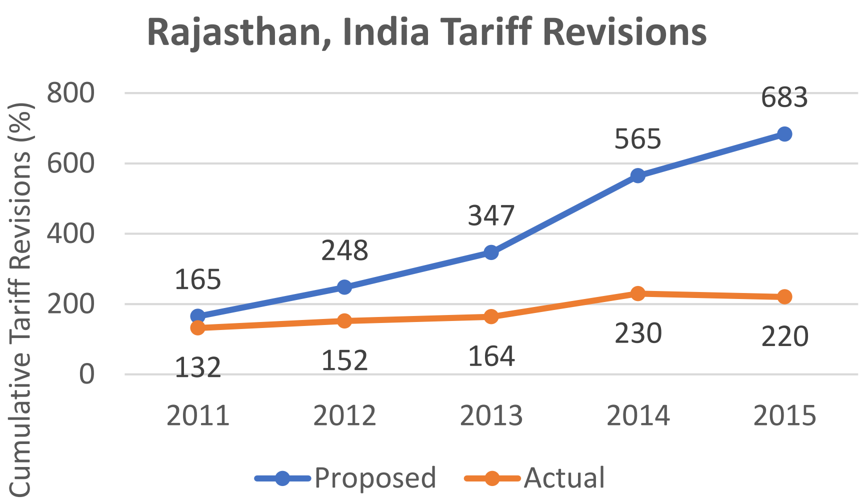
While many utilities cover operating costs few cover full capital costs of service



Source: Rethinking Power Sector Reform, 2019

Regulatory tariff determinations do not always translate into tariff adjustments





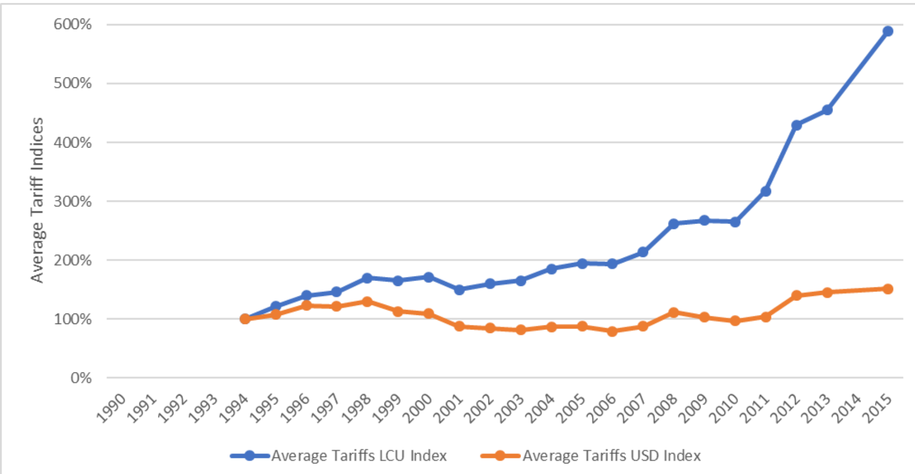
- Increasing tariffs can be contentious for regulators, and requires authorizing environment that varies
  - ➢ across countries
  - ➢ across time in any given country
- Some of them operate more as “advisory” than “independent” regulators
- A possible compromise adopted both by Egypt and Senegal is to have
  - ➢ the regulator determine the revenue requirement of the utility
  - ➢ the government (MoF/MoE) decide the tariff level contingent on providing required compensating subsidy to meet revenue required

Source: Rethinking Power Sector Reform, 2019

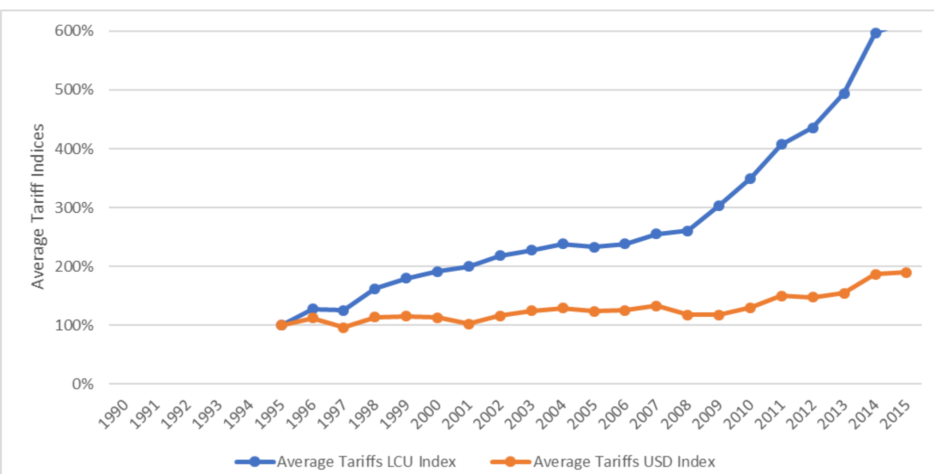
WORLD BANK GROUP

Macro-shocks can rapidly erode value of regulatory tariff hikes

TANESCO, Tanzania



K-Electric, Pakistan

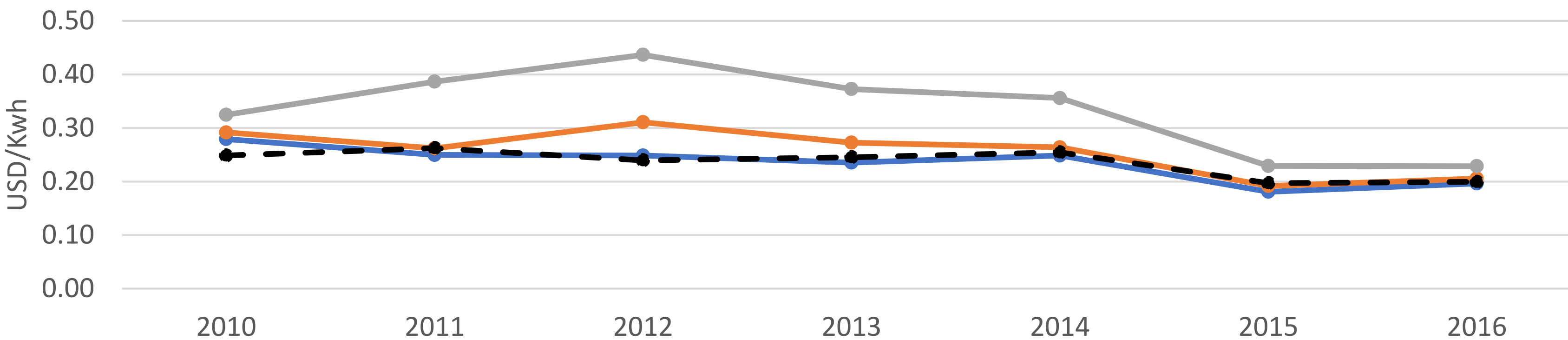


- Even when regulators succeed in adjusting nominal tariffs, their real value may be rapidly eroded through exchange rate devaluation
  - ➢ In Tanzania, LCU tariffs rose 500% from 1994-2015, while in USD terms tariffs rose by only 50%
  - ➢ In Pakistan, LCU tariffs rose 517% from 1994-2015, while in USD terms tariffs rose by only 90%

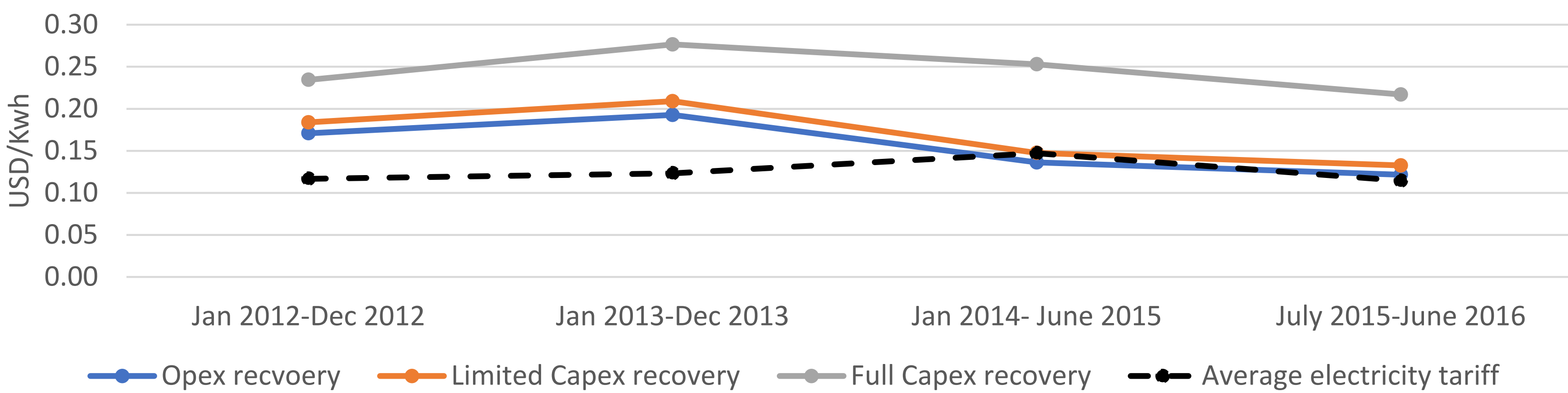
Source: Rethinking Power Sector Reform, 2019

Sector shocks play a major role in moving countries in and out of cost recovery

Senegal: Cost recovery improves after oil price drop in 2014



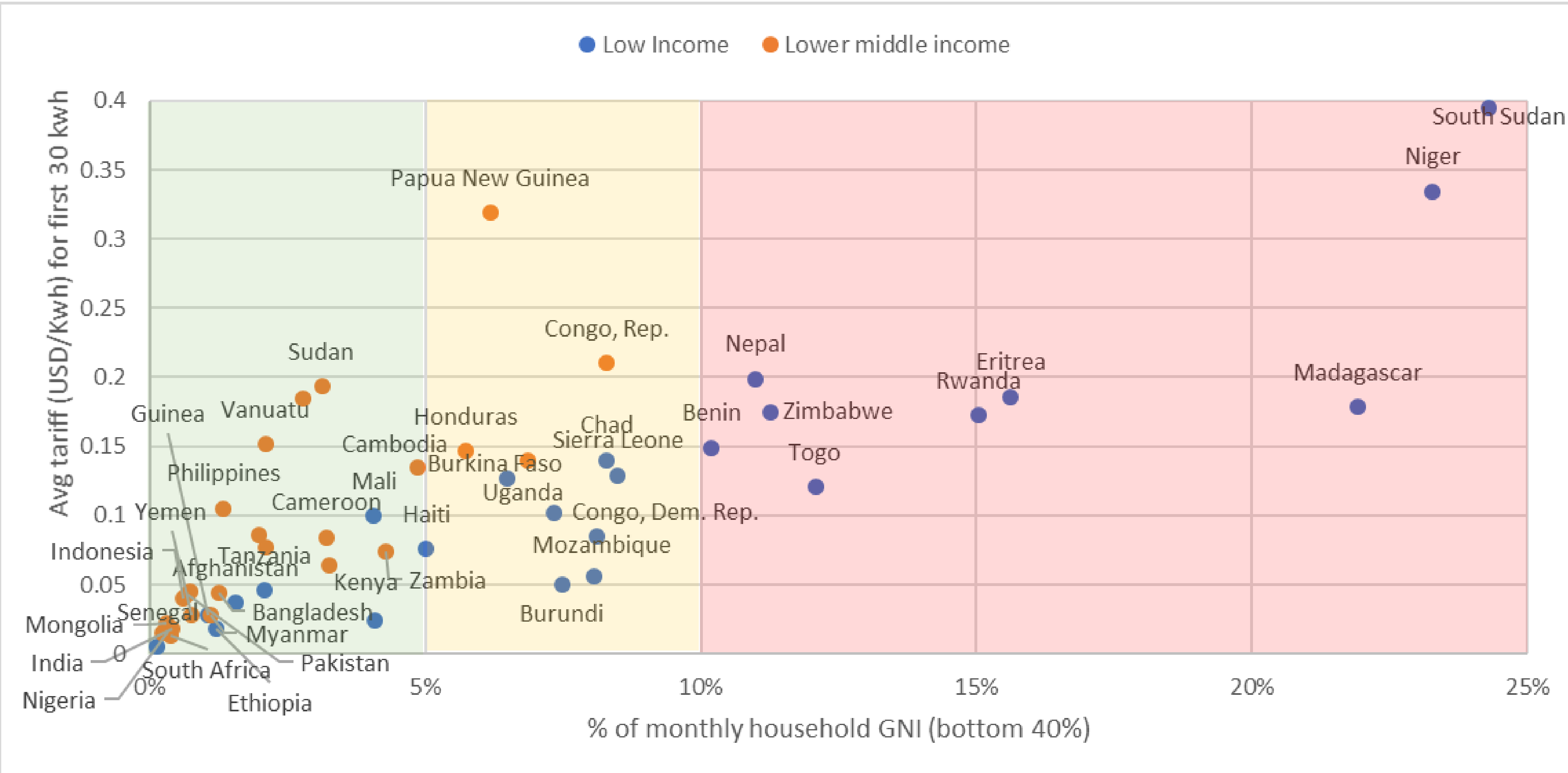
Tanzania: Cost recovery improves after end of drought in 2014



WORLD BANK GROUP

Source: Rethinking Power Sector Reform, 2019

Affordability remains a serious constraint to tariff-setting in LICs with tariffs >$0.15/kWh

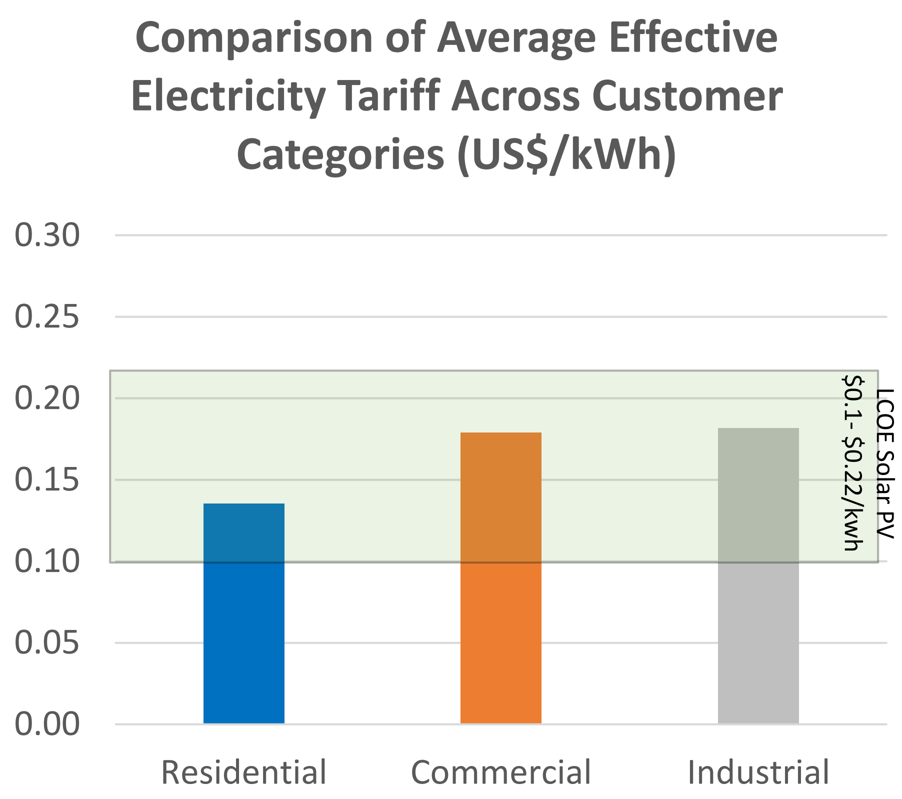


Note: Central African Republic, Liberia, and Somalia are outliers in the red zone and fall out of the range of the axis

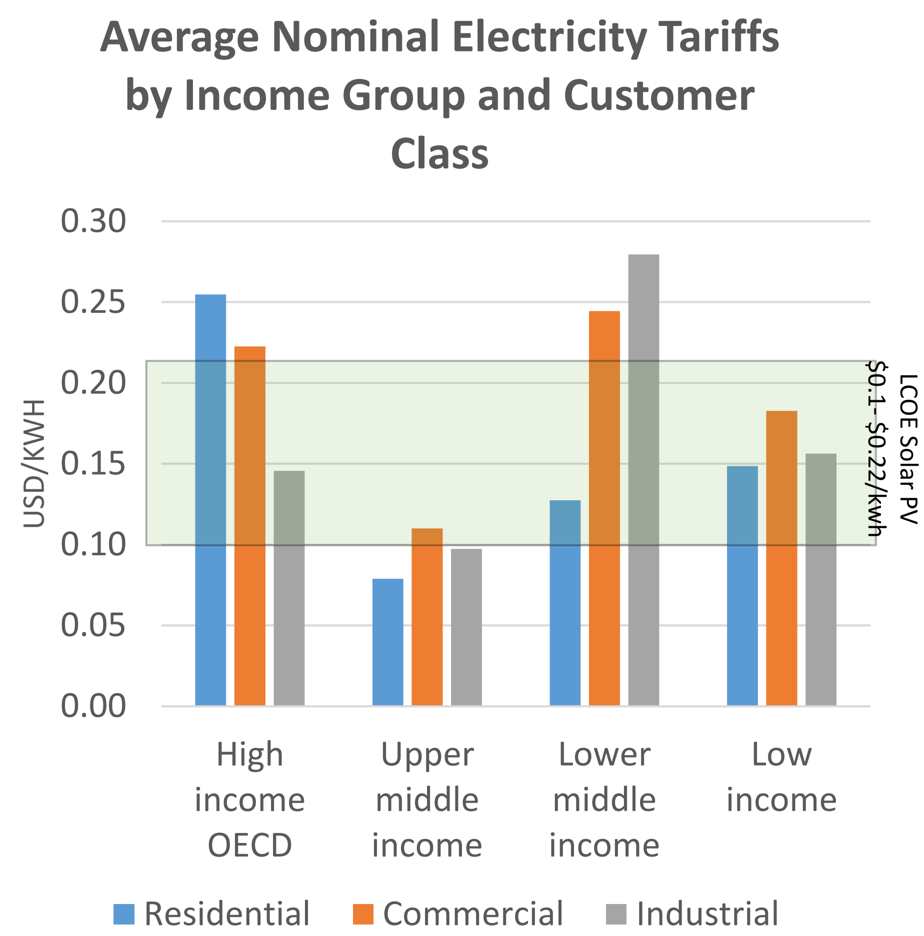
WORLD BANK GROUP

Source: Rethinking Power Sector Reform, 2019

Prevalent cross-subsidies benefit residential customers and incentivize grid defection



*LCOE estimates for Solar PV from Renewable Power Generation Costs 2017, IRENA



WORLD BANK GROUP

Source: Rethinking Power Sector Reform, 2019

Conclusions

- Under-pricing is not the only reason for a subsidy gap in the electricity sector, but it is often the major one
- While most jurisdictions set prices to recover operating costs, few are able to sustain prices that cover full capital costs
- Regulators face political economy challenges in getting through the tariff adjustments demanded by cost recovery
- Even when tariffs are adjusted, cost recovery can be rapidly eroded
  - By macro-economic shocks like exchange rate devaluations
  - By sector shocks like oil price hikes (thermal system) or droughts (hydro systems)
- Furthermore, genuine affordability concerns exist when cost recovery tariffs fall above $0.15/kWh in low income countries
- In addition to benefiting from subsidies, residential customers also benefit from cross-subsidies at the expense of commerce and industry
- Tariff levels for grid electricity across customer classes are reaching a level where rooftop solar will become increasingly competitive

WORLD BANK GROUP