

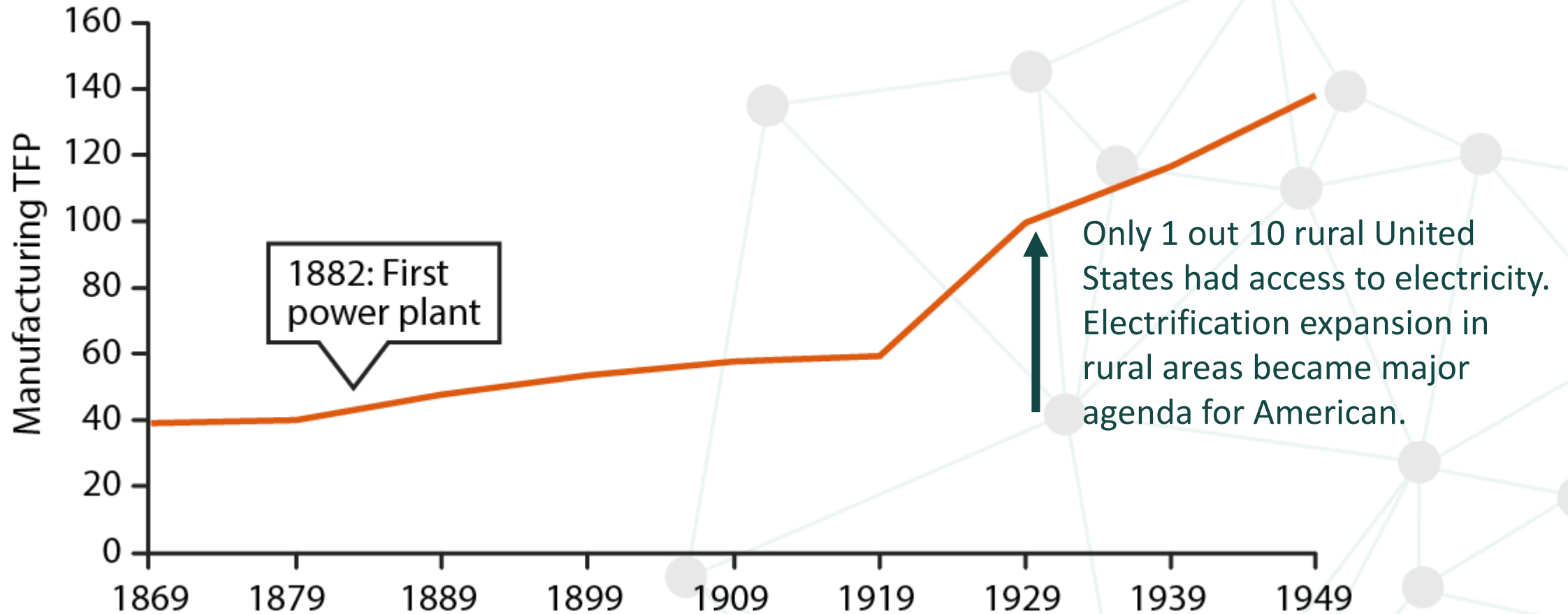
# Decentralized electrification and productive use of electricity in Africa

*Moussa P. Blimpo*  
*World Bank*

*Workshop on Energy Access*  
*January 14th, 2021*

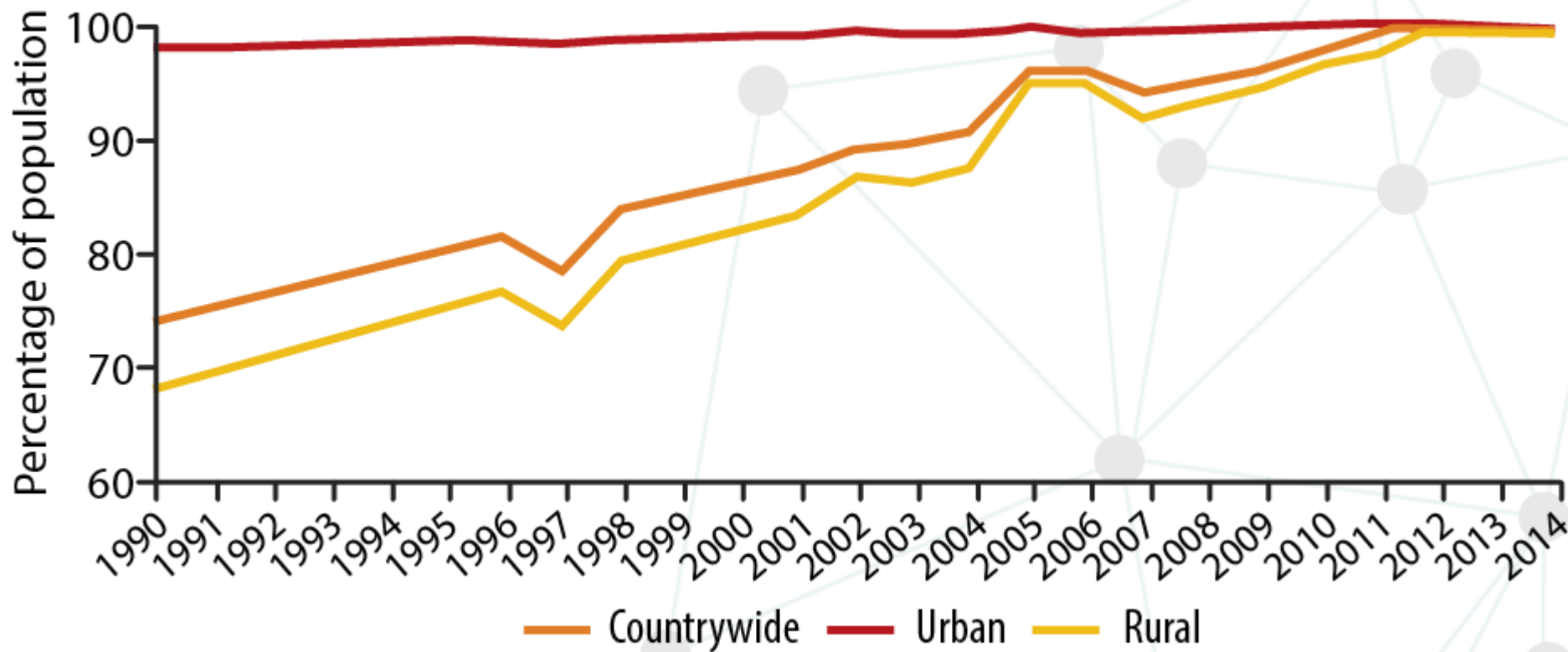
# Electrification: A long term foundational investment

a. United States, manufacturing TFP (index, 1929 = 100)



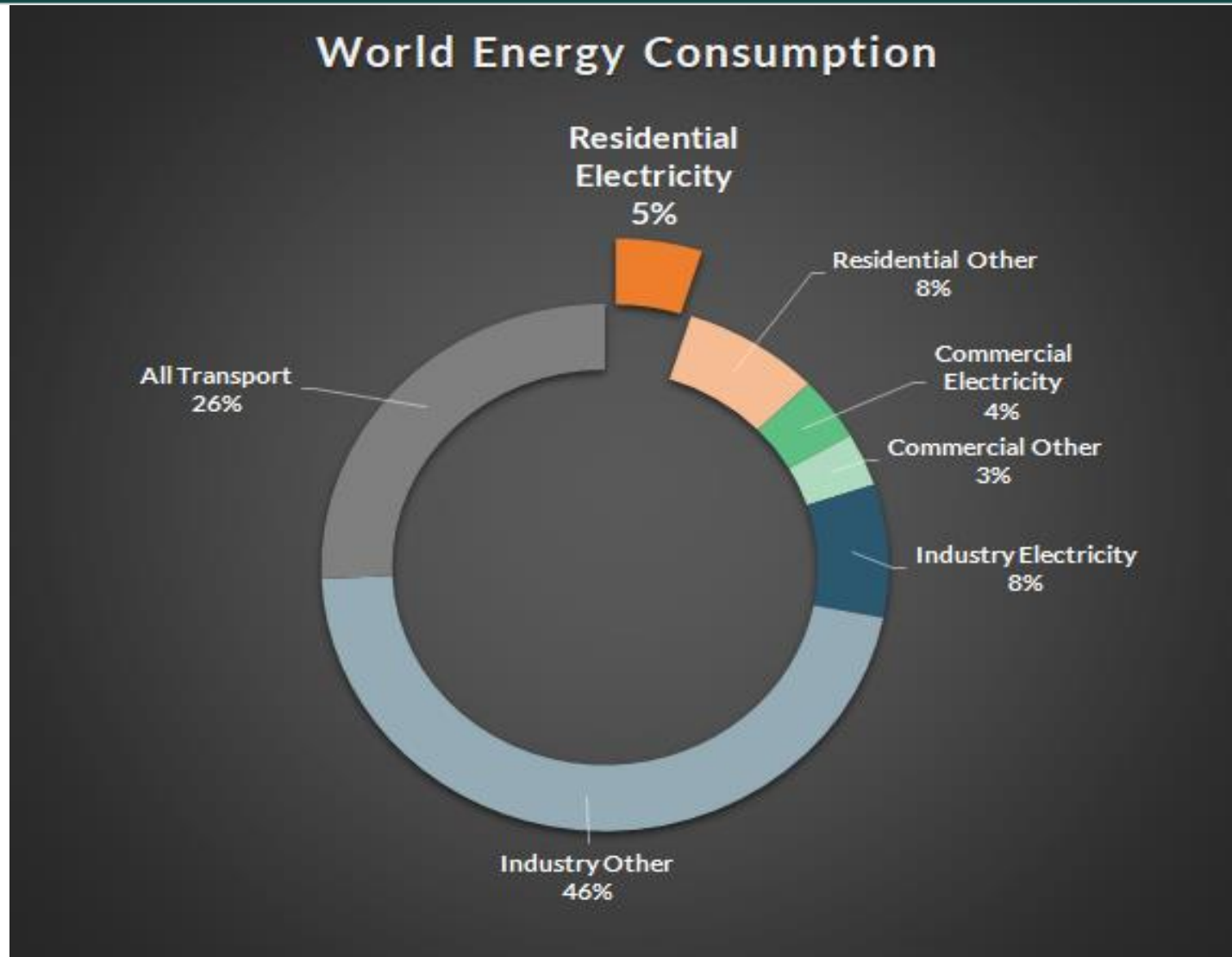
# Success often came from governments arbitrage

**Figure B1.1.1** Vietnam: Access to Electricity



Source: World Bank, World Development Indicators.

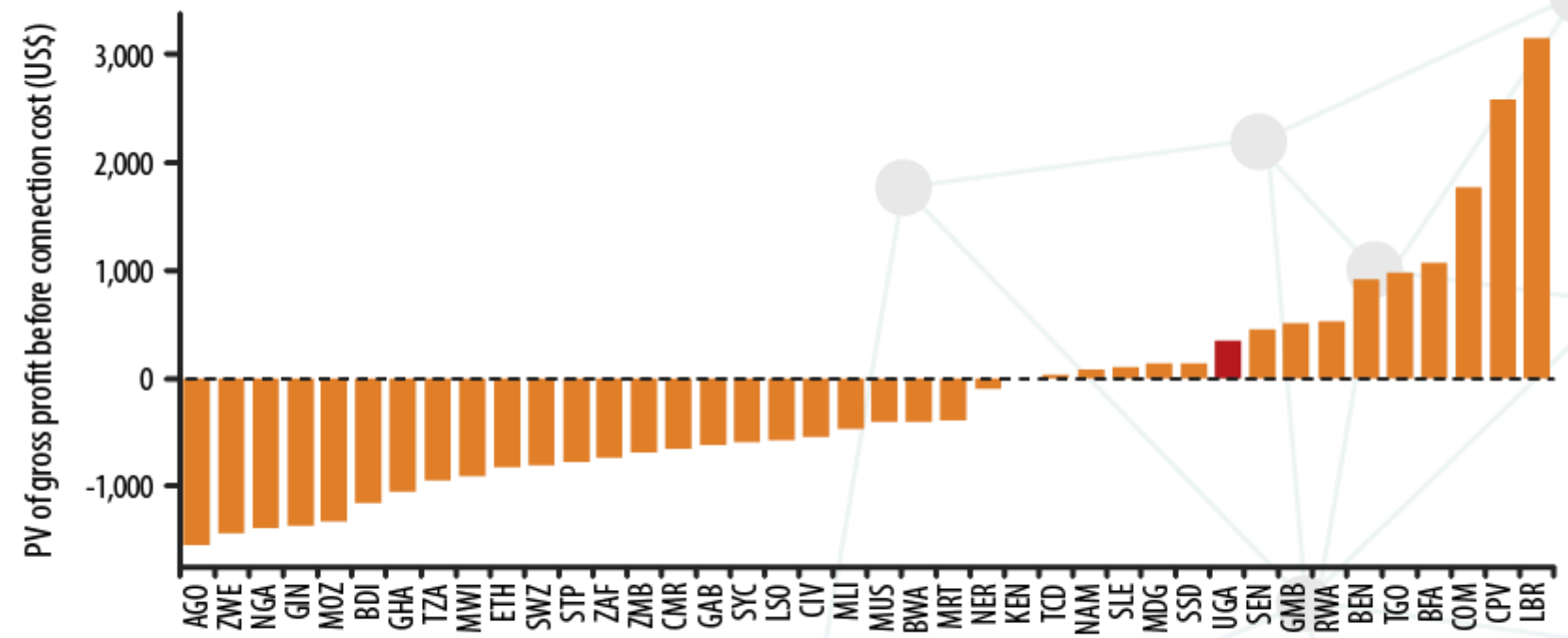
# Most of the energy goes to economic production



Source: Energy for Growth Hub

# Adding customers is not profitable for most utilities

Present Value of Gross Profit from an Additional User, before Connection Costs



Source: Blimpo, McRae, and Steinbuks 2018.

# Solving a different problem?

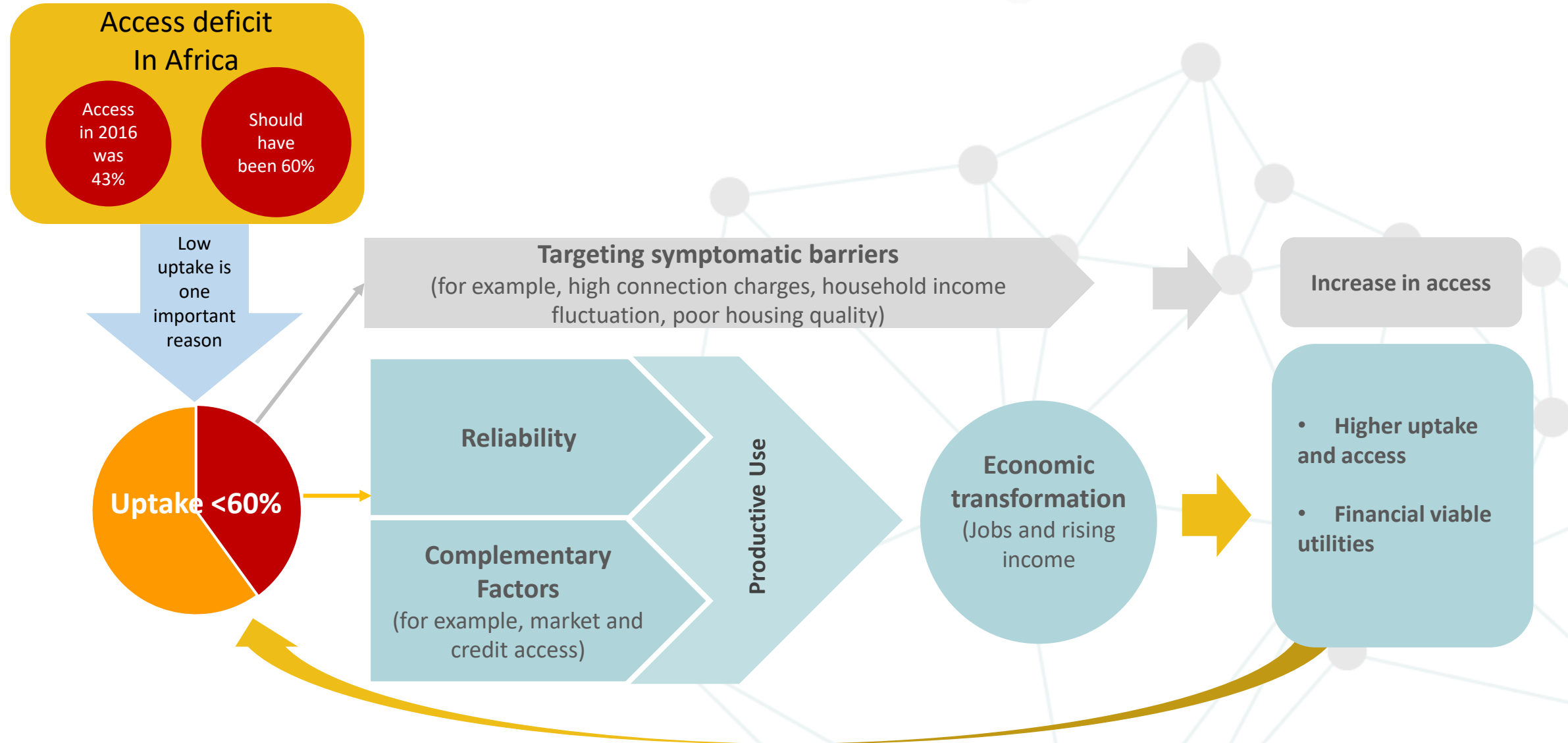


# Even then ...

## Can run but can't hide?

*“ ... The main focus of the event is on off-grid solar standalone. While **there is growing consensus that end user subsidies are needed**, the sector has little experience to date on how to design a successful and sustainable subsidy mechanisms...”*

# Two Routes to Address the Electricity Access Gap





# Productive use in the context of off-grid solutions

## Off-season agriculture in Gabar, Senegal



1. Highly popular and desired
2. Produce onions for export to cities ( High value crop needed to break even)
3. Backup oil-powered generators for morning watering (lack of power storage)
4. Maintenance and repairs in event of breakdowns

# Productive use in the context of off-grid solutions

## What to pay attention to?

1. Predominantly rural, agricultural, need higher value crops, modernization of rural economy (e.g., agroprocessing)
  2. Decentralized means generation cost can vary drastically -- Government regulations to have more flexibility, not one-size fits all.
  3. Capacity and reliability - the technology to be dependable
  4. Complementarity (Bundling or targeting)
    - Access to credit
    - Skills (Train or attract)
    - Access to market (e.g., feeder roads, proximity to cities)
  5. Feasibility studies (Supply side not covered in this talk)
    - Identify profitable activities – not just modernizing existing occupations
- 