FROM IDEAS TO ACTION: USING END-USER SUBSIDIES TO ACHIEVE UNIVERSAL ENERGY ACCESS
20 JANUARY 2021

Niger Deep Dive

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USING END-USER SUBSIDIES TO ACHIEVE UNIVERSAL ENERGY

NIGER CASE

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January 20, 2021

Outline

1. Context and Background
   a. Country context
   b. NESAP
   c. Project Haské

2. Rationale for the demand side subsidies

3. What the country team seeks to get out of the workshop

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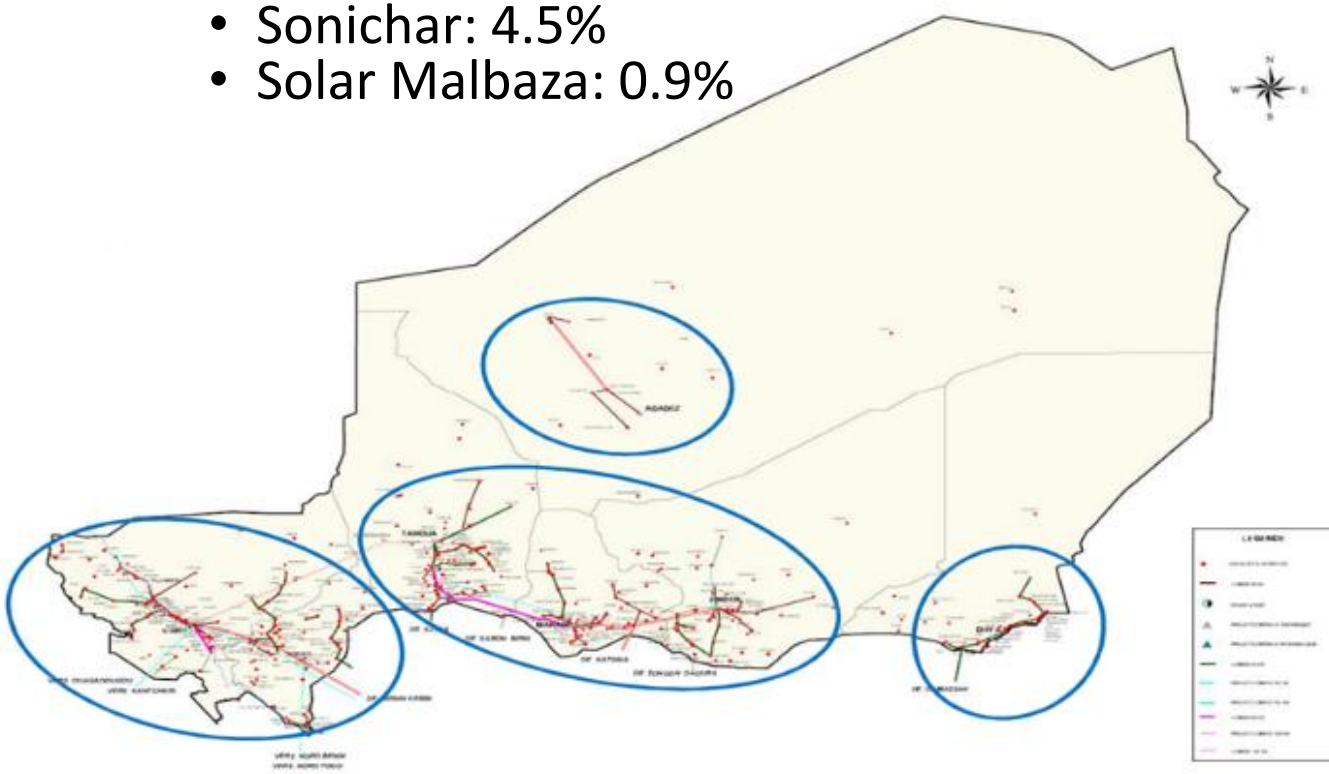
Context and Background

- **Demography**
  - **Population: 22.4 million (2018) with 3.9% growth rate**
  - **1.267 million km2** - two-thirds is desert
    - 17.7 people/sq.km
  - **80% of the population** living in the **southwestern part** of the country
    - Density in the south: 70.8 people/sq.km
  - **80% of population** lives in **rura**l areas
- **Poverty rate:** 45.4% (2014)
  - **Urban:** 18.6%
  - **Rural:** 55.2%

- **Key public sector actors**

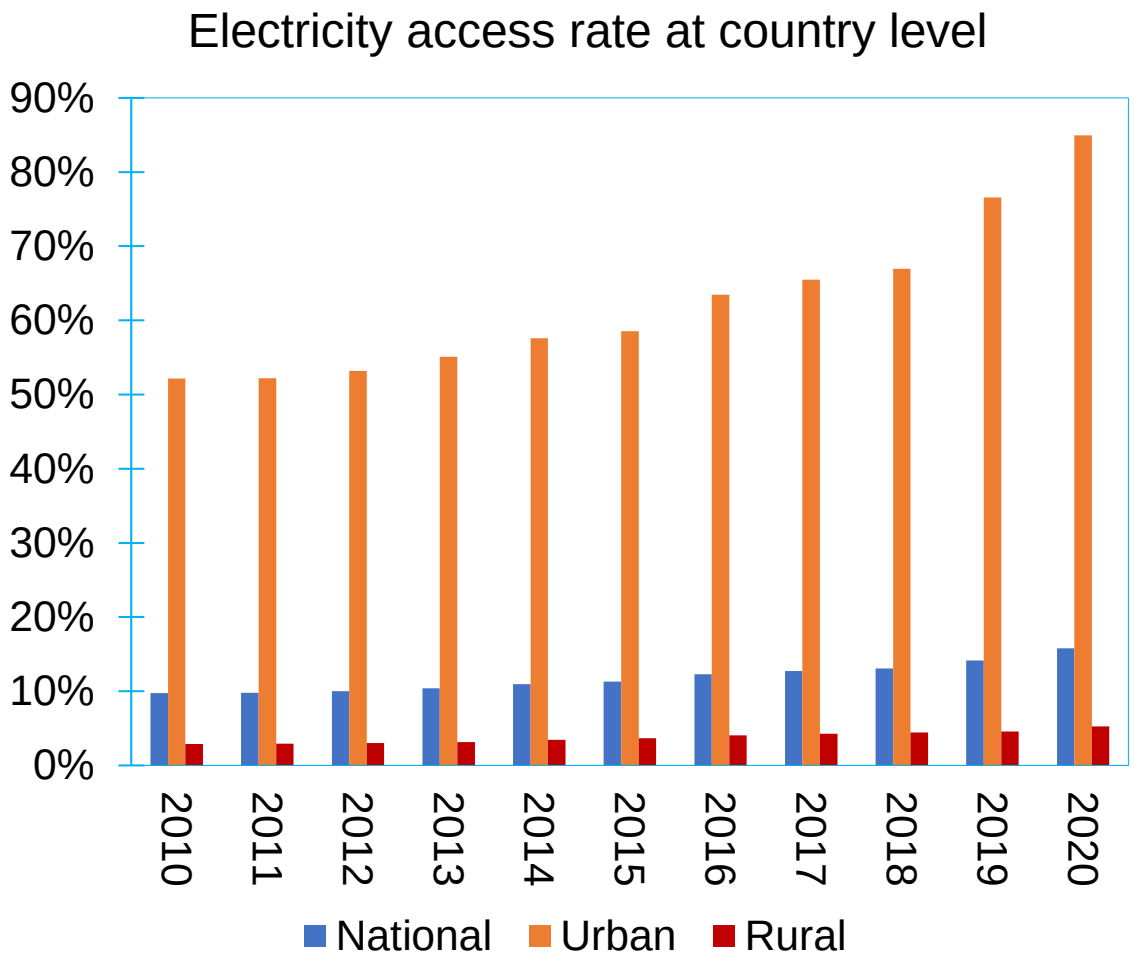
- **Four non interconnected grids and 110+ diesel-powered isolated mini-grids**
- **Energy Mix (2019)**
  - Imports: 77.3%
  - Domestic thermal: 17.3%
  - Sonichar: 4.5%
  - Solar Malbaza: 0.9%



Low Energy Access and Embryonic Off-Grid Market

Access to electricity is low, with significant disparities between urban/rural areas

- **National-level access rate of 16%** (~3,5 millions) in 2020: Urban (50 – 86%) / Rural (~5% - 17million)
- Traditionally, the **utility was mandated to develop access,** with **limited financings**
- **Market for mini-grids virtually inexistent** and **Unmatured off-grid ecosystem**



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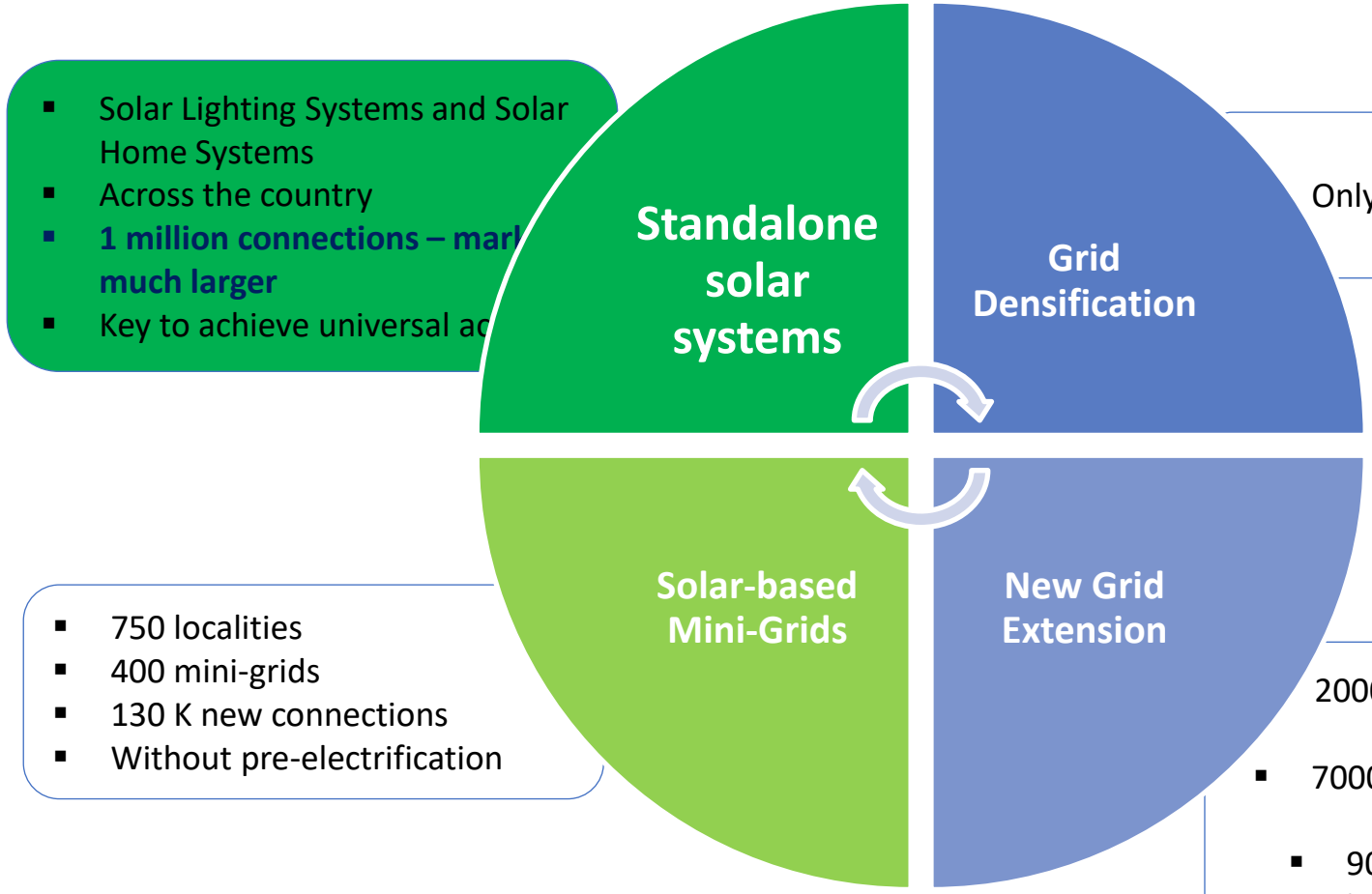
National Electrification Strategy targets 80% Access rate by 2035

- GIS analysis shows that a **mix of technologies needed** for universal access
- **Grid electrification is the least cost option for 76%** of the connections in a steady state
- **Mini-grids (2%) and standalone systems (22%) – critical** in the transition and for remaining of the population



- Solar Lighting Systems and Solar Home Systems
- Across the country
- **1 million connections – marl much larger**
- Key to achieve universal ac

- 1000 Electrified localities
Only 32% of end-users connected
- 985K new connections

- 750 localities
- 400 mini-grids
- 130 K new connections
- Without pre-electrification

2000 development hubs by 2025 – 874 K connections
- 7000 localities additional in 2035 - 1.5 million connections
- 90% connections in rural areas
- Alternative technologies (MALT)

4.5 million connections by 2035: **2019-2025:** 1.6 million | **2026-2030:** 1.3 million | **2031-2035:** 1.6 million

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Niger Solar Electricity Access Project (NESAP) – Off Grid activities

- Approved in June 2017 and effective in Dec. 2017
- Closing 31 January 2024
- $50 M to develop solar market and ecosystem for off-grid electrification including mini-grids*
- **Component 1 – Market Development of Stand-alone Solar System (Line of credit) - $5M**
  - Two Local commercial Banks (Sonibank and BSIC) to provide finance to solar companies… and consumer finance : at market rate
  - One Microfinance institution (Capital Finance): consumer finance
  - 4,000 solar products and 320 pumps sold by 9 companies
  - 6 companies used LoC
  - Commitment : 80% - Disbursement : 45% since Sep. 2018
- **Component 4 - Implementation Support and Technical Assistance - $8 M**
  - Fiscal incentives: import duties exemption for LG certified systems
  - Technical assistance: awareness, communication, incubation, grant to companies
  - TA to support financial institutions' capacity (training on new product creation)
- **Component 5 - Contingency Emergency Response Component - $2.8 M**
  - COVID response through electrification of health facilities… and few schools

* Components 2 and 3 support mini-grids (greenfield and hybridization)

Project Haske – Project Development Objectives

PDO. Accelerate access to electricity for households, health and education facilities, and businesses in Niger through grid and off-grid solutions

Activities

- Construction of transmission and distribution backbones and extensions
- Financing of mini-grids and standalone solar systems
- Connecting new consumers and public institutions (health facilities, schools, water boreholes, public lighting)
- Supporting the deployment of clean cooking solutions

Outcomes

- A portion of the currently unelectrified households will get electricity connections (on-grid or off-grid)
- Households using biomass for cooking are expected to get health and economic benefits by switching to cleaner cooking options
- The quality and reliability of electricity services will improve, enabling households and businesses to make better and productive use of electricity
- A portion of currently unelectrified public institutions in Niger, including schools and health centers, will get electricity

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Project Haske – Sub-component 3.2. Solar Off-Grid Electrification for Households and productive uses

Incorporating Lessons learnt from NESAP

- Both supply and demand side barriers need to be addressed
- Line of credit still relevant for company and consumer finance, but at a lower interest rate
- Affordability was a big barrier: high-quality products cost up to 8 times the cost of counterfeit products
- Weak local financial market and unfamiliarity with solar products – continue technical assistance for capacity strengthening
- Local companies are small and not well organized – grant, capacity support
- Geography and increasing security concerns

Few Design Features in Consideration

- Continuation of NESAP **Line of Credit by the Government and attracting ROGEP LoC**
- **Fiscal incentives : exemption of imports duties** + **VAT moratorium on** a list of solar products and equipment
- Address affordability and availability constraints across the country – geographical targeting?
- **Demand side subsidy** to address the household affordability gap –
- **RBF scheme:** to accelerate deployment by providing additional incentive to the supply side and attract local/international companies
- Targeting mechanism for companies?
- Special business model for **Host Communities and refugees**?

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Why the need for a demand side subsidy in Niger – The Rational

- High Poverty level in rural areas :
  - **Without consumer finance** : 30% of off grid households can't afford a $5 solar lamp, 60% can only afford a $10 Solar lamp + charger and only 10% can afford a solar kit of $40.
  - **With consumer finance**: 40% could afford a solar light + phone charger, 30% could afford a $100 solar kit and the remining could afford a SHS of over $220*
  - Northern region with very low population densities which increase the cost for distribution of solar products
- Solar companies too weak to unlock the market potential without demand stimulation – low sale volume
- Geography and security issues increase final products costs
- Competition of low-quality solar products – counterfeit products dominate the market and are up to 8 times cheaper than certified products

*Off-grid solar market assessment in Niger & design of market-based solutions (June 2017)– Open Capital Advisor

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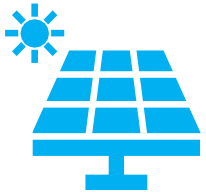
Rational of the Demand Side Subsidy (DSS)

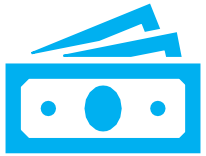
Goal:
- Reduce **affordability gap**



Products:
- Lighting global certified products
- Solar lanterns, plug and play and SHS

Target Off-Grid households (HH)
- All off grid HH independent of their location

Delivery channel
- Directly to the beneficiary (electronic voucher) or through companies



Budget and Subsidy Level
- It will vary according to the selected type of product
- It will also be based on the ability to pay of off-grid households
- It will have a maximum value that will be independent of the other factors

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What the country team seeks to get out of the workshop

- Hear and learn from experts that have designed and implemented DSS projects
- Get comments/advices on our Rational for the DSS
- Subsidy directly to the households (Vouchers) vs through companies: Pros and Cons
- Fixed subsidy amount vs subsidy to cover a percentage of the product cost: How to set the level of subsidy?
- What could be the criticism regarding market distortion?
- Preselected companies (tender) vs Based on all companies with qualified products
  - Mix of international companies and local companies
- Challenges/recommendations when having a DSS along side a SSS and a Credit line
  - Should the DSS be targeted geographical to avoid market distortion?
- What are the costs related to the setup of the tools needed for DSS projects implementation:
  - Form of administration: Independent or public institution, fund manager
  - Verification system: Granularity of the verification?

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Thank You

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