

The Role of the Private Sector in Energy Sector

Ministry of Water, Irrigation and Energy

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The Role of the Private Sector in Water and Energy Sector

Who is the private sector?



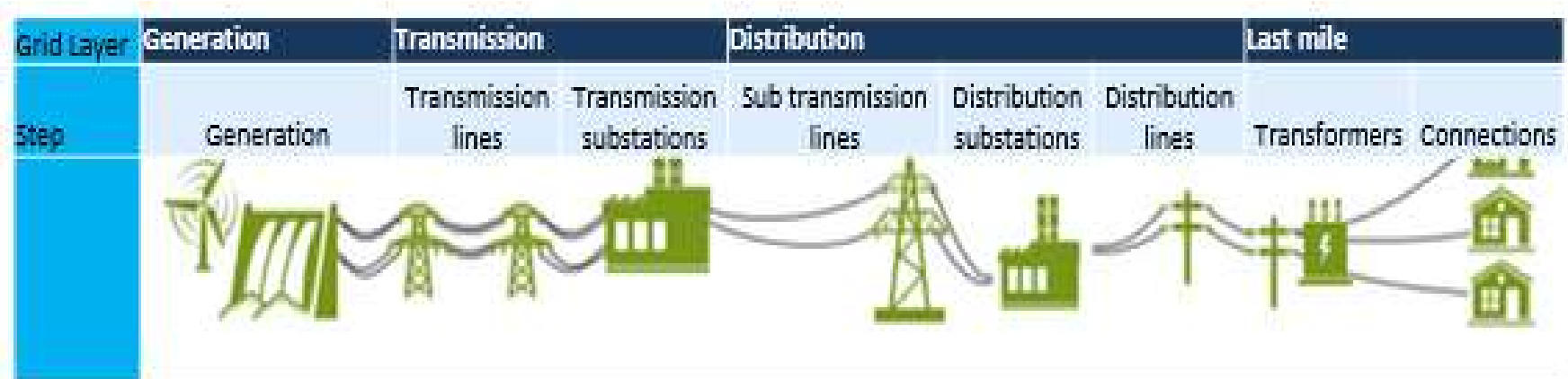
- Individuals
- Groups
- Cooperatives
- Public Private Partnerships
- Non-public for profit organization

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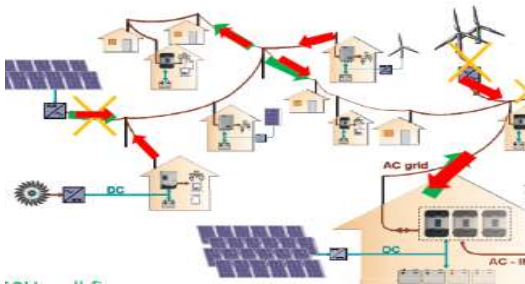
What does the private sector do?

- Consulting
- Developing – IPPs
- Supply – equipment supply
- Contract – EPC on power plant, distribution, transmission, water supply systems

Electricity facilities



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What does the private sector do?

- Product assembly
- Product manufacturing
- System integration
- Wholesaling/ retailing/ transporting
- Promoting, marketing

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Characteristics of the private sector?



- Source of Finance – equity, loan, grant
- Efficient – delivery, cost,
- Innovative – technology, business model
- Responsive – changes, complexity, uncertainty
- Sustainable – resilient/ adaptive,
- Risk taker – unserved market



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Environment for the private sector to effectively operate ?

- Enabling policies and regulations - to operate and be innovative
- Predictable rules, regulations and directives - to build confidence and encourage investment
- Effective and efficient bureaucracy – to actualize efficiency and responsiveness
- Access to finance -

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Rural electrification trends

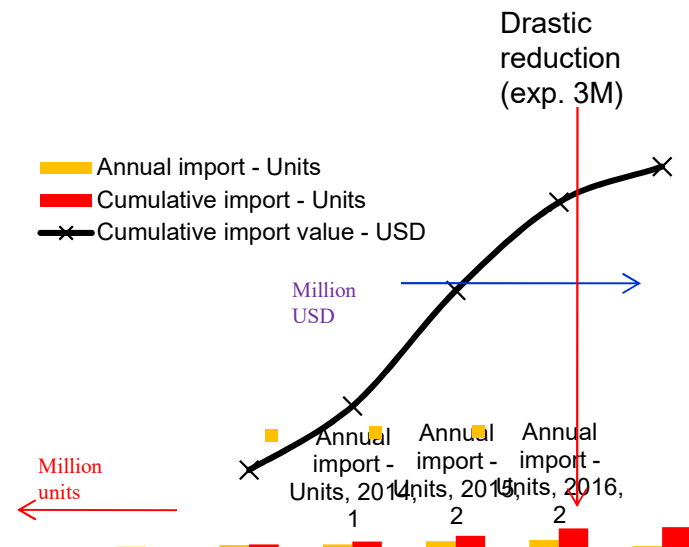
Slow rate of rural customer connection

(although relatively successful area coverage; >50% of sub-district centers are connected to the grid)

Very fast off-grid access through solar lanterns/HS

(drastic fall in solar system sales in the past 2 years due to hard currency limitations, other factors)

Over the past five years, fuel based lighting has fast disappeared

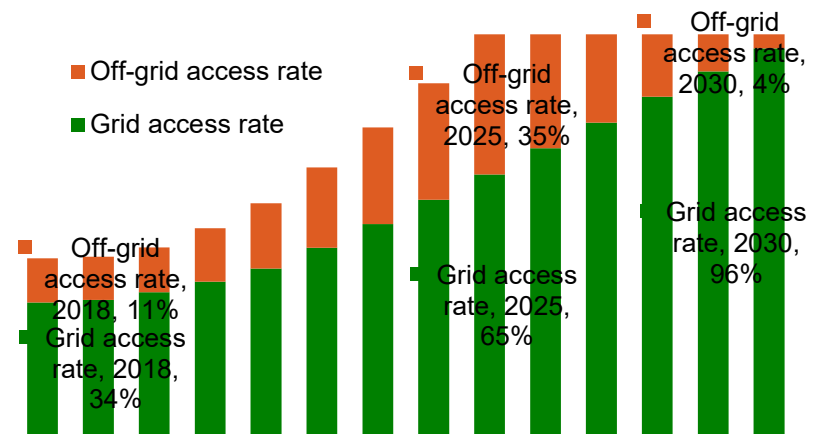


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Rural electrification NEP

The new National Electrification Program (NEP2 : 2019)

- **Integrated plan for universal electrification**
- **100% access in 2025 (65% grid, 35% off-grid); 100% access for health facilities and schools**
- **8.2M grid connections, 5.9M off-grid connections during 2019-2025**



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Rural electrification NEP

Investment required

- USD 4.6 billion (56% on grid, 44% off-grid) during 2019-2015
- USD 3.1 billion sought from external sources

Figure ES.14 Breakdown of grid and off-grid investments and syndication scenarios for universal access, 2025

	Investment (US\$ million)	GoE contribution (US\$million)	Syndication (US\$million)
A. Grid program			
Grid total investments* (\$370/connection)	3,200		
Customer contribution (—)	(1,100)		
Total	2,100	480	1,620
B. Off-grid program			
Access to finance (with a revolving fund)	1,760	530	1,240
End-user subsidy	72	72	-
Social institutions	230	70	160
MST off-grid solar	133	41	92
Mini-grids (MST and EPC) ^a	300	280	20
Off-grid total investment syndication	-2,500	-1,000	-1,500
C. Program implementation support (grid and off-grid)	50	20	30
Total investment syndication (A + B + C)	4,650	-1,500	-3,150

MTF=Multi Tier Framework
MST=Minimum Subsidy Tender

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Opportunities

Off grid energy

- Large off-grid pop (>70M), MSEs (100k?), social institutions
- Small agri, irrigation, preservation, processing
- Medium & Large Agri/Agri-Industry

- Technologies for management (control/monitor, payment)
- Low off-grid system costs (\$↘) vs. high grid costs

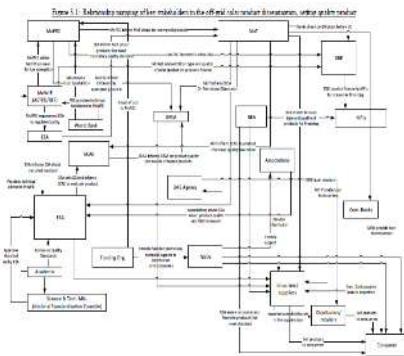
Distributed systems

- Distributed resources (energy, capital, management); additional resources to grid, transport, thermal energy

- S&M Hydro – 51% of tech cap.
- Biomass/waste/biofuels – forest waste, bamboo, agri-process waste, landfill, wastewater

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Existing operating platforms and challenges



- Limited access to finance (to businesses and consumers)
- Lack of guarantee for investment
- Long bureaucratic procedures
- Undeveloped distribution chain
- Limited use of ICT
- Capacity limitation – 8.2M on grid, 5.9M off-grid connections in 6 years. Local technical and management capacity for this low for grid connections.
- Uncertainty because of changing directives
- Lack of clarity in implementation of regulations (what to regulate, how to regulate, when to regulate)
- Long delays to respond to requests – permits, licenses, others
- Lack of accountability for failure to provide timely response or not at all

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Thank You