Drivers and Policies for Financially Sustainable Electricity Systems

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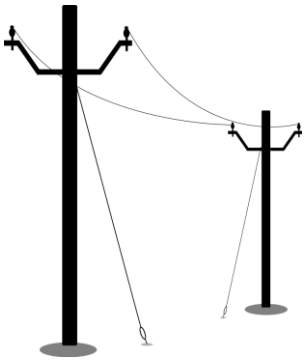
Global Subsidies Initiative

IISD
International Institute for Sustainable Development

A financially sustainable electricity sector…….

Recovers operating costs

Makes investments



Delivers reliable power

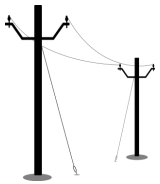
Meets environmental and social norms

Example: Indonesia

The national utility makes a profit **BUT** only because of significant regular government subsidies in the form of direct payments.

Significant public and private investment is being made in generation.

Outages are reducing, reserve margins and capacity to demand ratio are improving.



Dependence on coal threatens air quality and wider sustainability indicators

Example: Indonesia

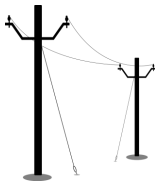
- Some significant challenges for the sector including:
  - Need to ensure subsidies paid to the sector are good value for money
  - Concerns that investment in coal have aided reliability but at risk of storing up sustainability costs (air pollution) for the future.

Example: Rajasthan

Utilities in Rajasthan lose around 3 Rupees (40% of production cost) for every unit of power they sell. Periodic bailouts bridge the gap.

Large scale investment in coal and renewables

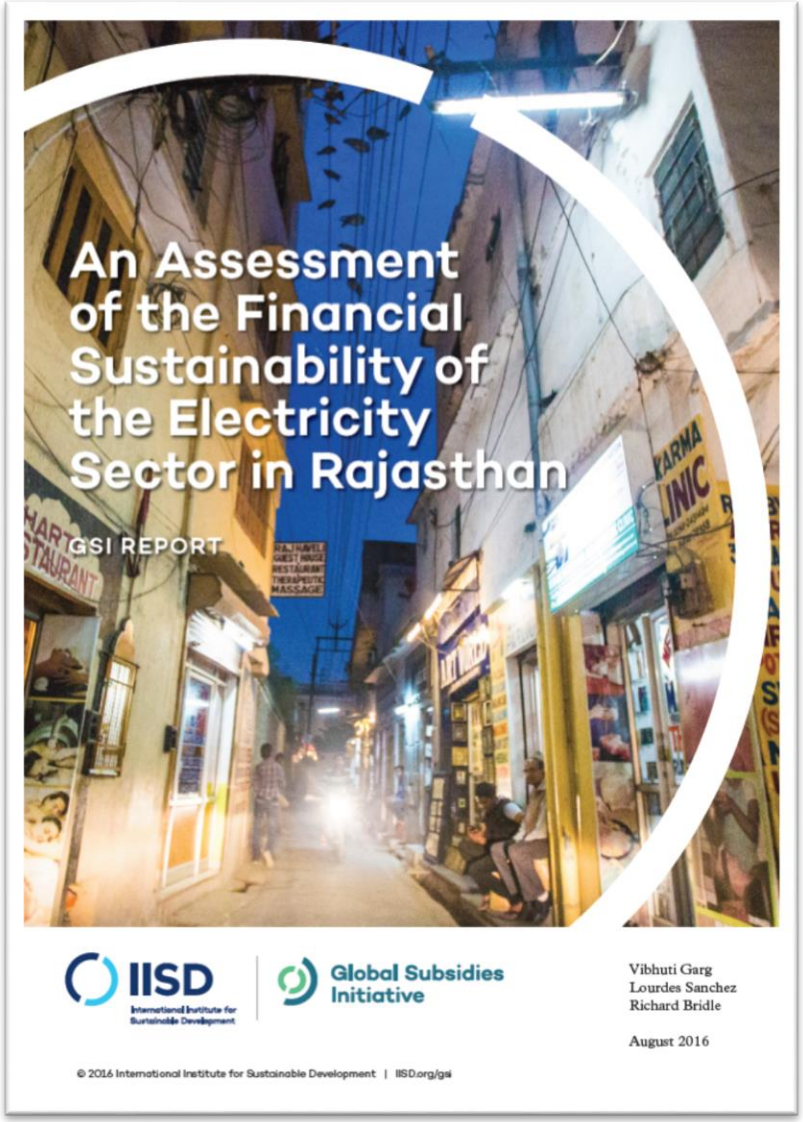
Generally positive. The ratio of capacity to demand improving and outages are reducing



Challenge to expand electricity access. Renewable capacity share is increasing but generation remains static.

Example: Rajasthan India

- The sector is functional but ad-hoc bailouts are regressive and costly.
- There is an open question of who should pay for electricity?
- Even if it is decided that the government should pay, these payments could be better targeted.

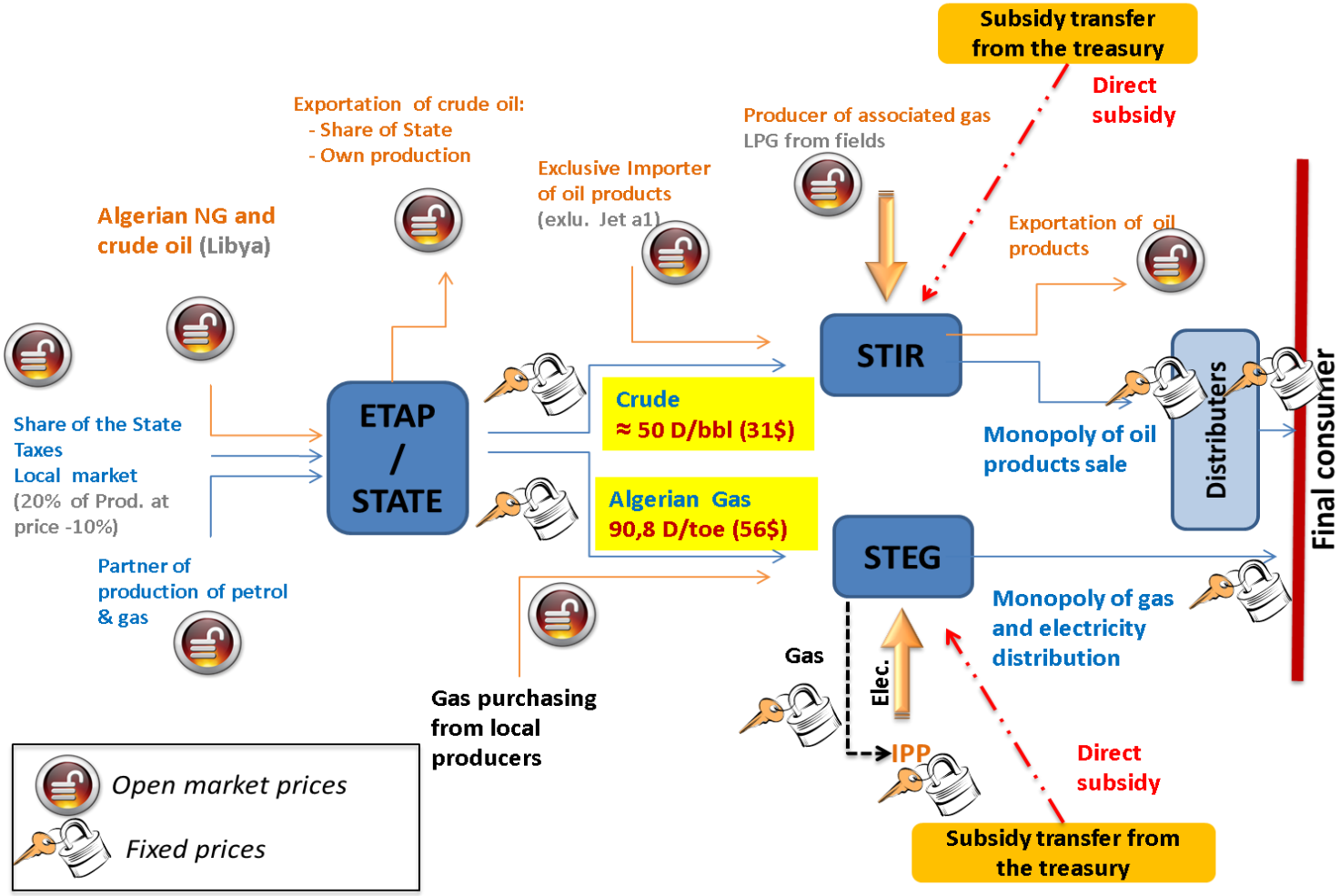


Indian policy response [Energy Subsidy Briefing September 2016 *(www.iisd.org/gsi)*]

UDAY Scheme

To ease the debt that was has severely impacted the finances of numerous distribution companies, the Government launched the *Ujjwal Discom Assurance Yojana* (UDAY) in November 2015. Under this scheme, state governments must assume up to 75 per cent of their respective distribution company's debt and issue sovereign bonds to pay back creditors. To date, 19 states have given their approval to the scheme and, of these, 10 states have signed MoUs with the central government. The deadline to sign up for the scheme has been extended till March 31, 2017 ("Cabinet extends," 2016).

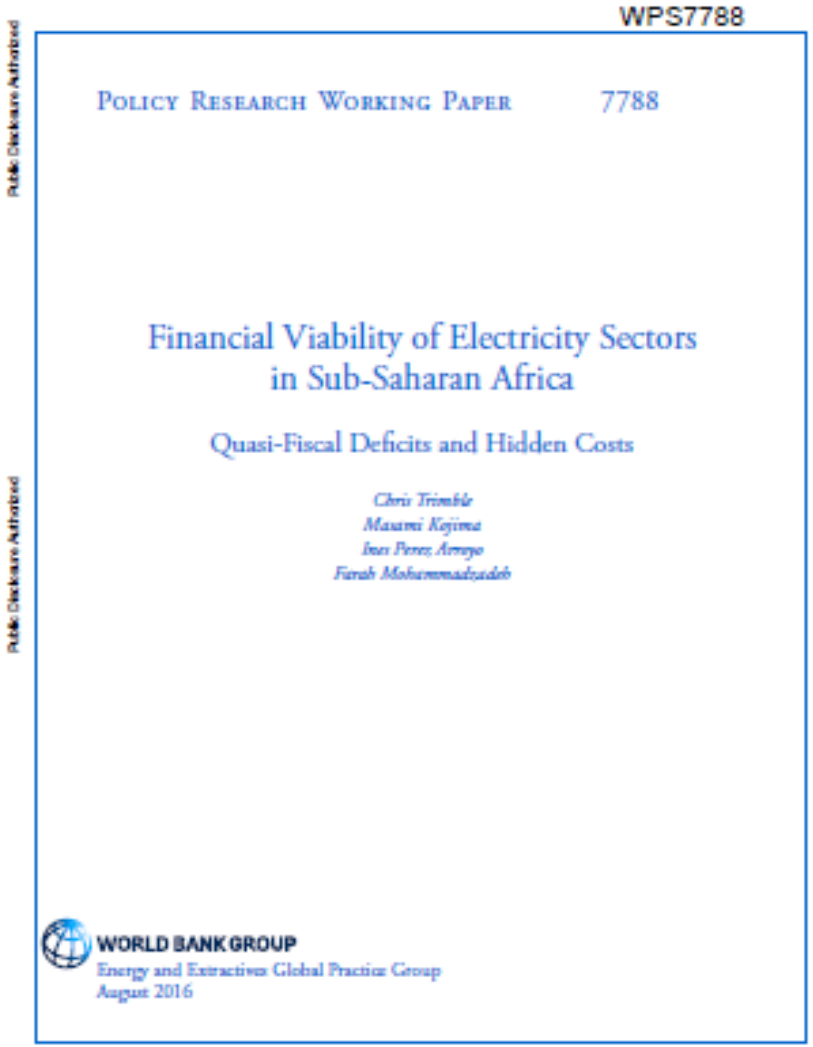
Consumer prices often held down by preferential fuel supply prices *(e.g. Tunisia, IRENA/RCREEE/IISD, 2014)*



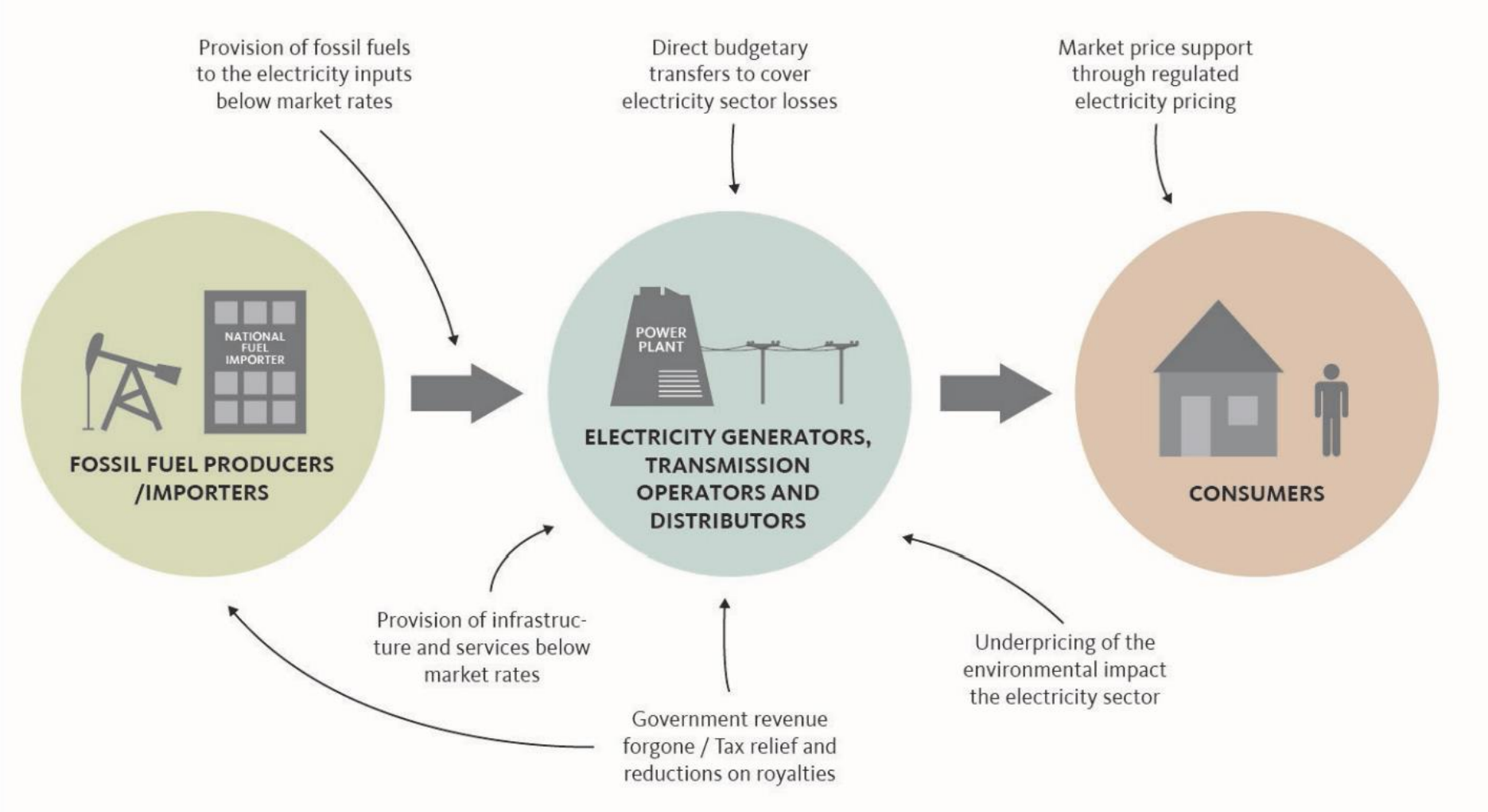
Source: ALCOR on the base of Information collected from DGE and STEG

Financial Viability of Electricity Sectors in Sub-Saharan Africa : Quasi-Fiscal Deficits and Hidden Costs

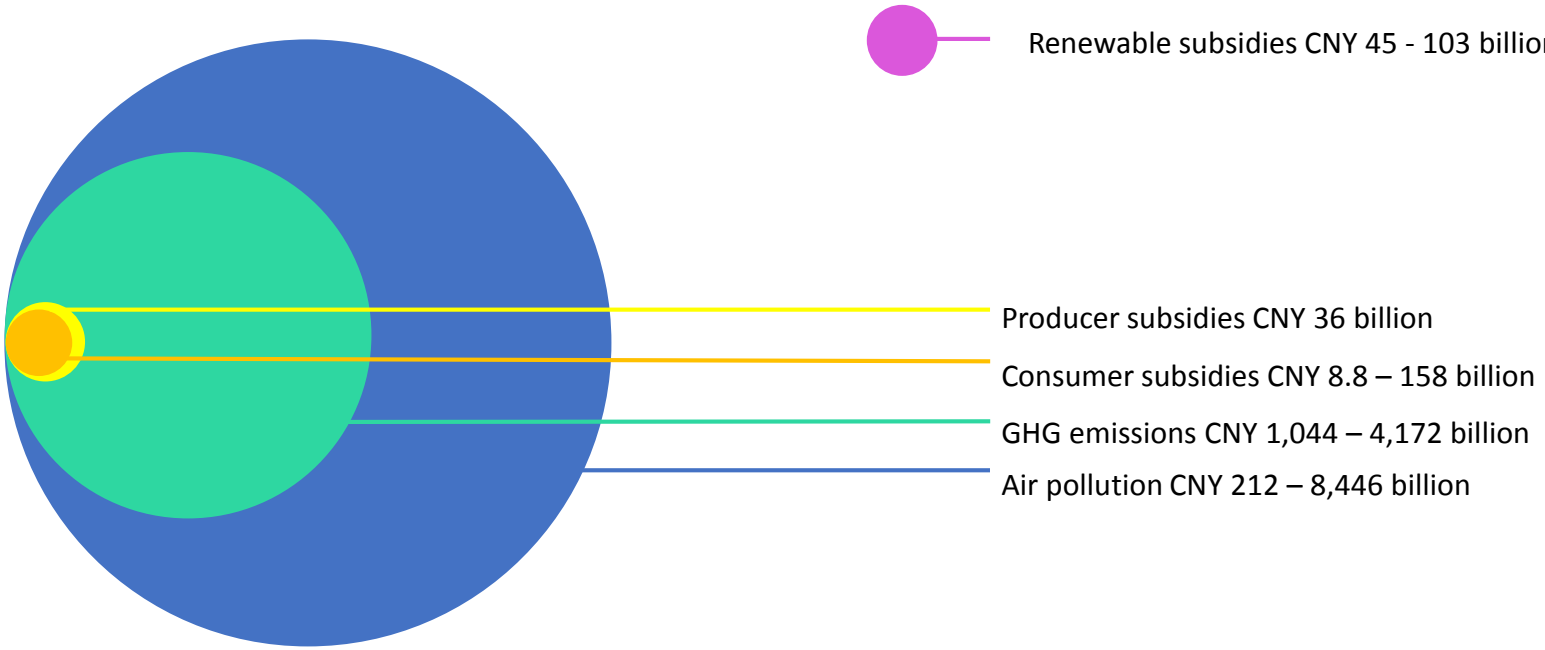
- Of 39 countries studied
  - Only 19 cover operating costs
  - Several lose >$0.025/kWh sold
- Quasi-fiscal deficits
  - Average 1.5% GDP
  - >5% GDP is some cases
- *"Combined network and collection losses on average represent a larger hidden cost and are less politically sensitive to address than underpricing"*
- Tariffs need on average to increase by $0.04/kWh to cover deficit
- Relatively few countries have declining viability



Electricity sector support



Visualizing the costs of subsidies and externalities: Coal in China



Notes on figure:

a) *Ranges indicate the range of all available data. Size of circle indicates average of all available data. Consumer subsidies based on* (Lin & Ouyang, 2014) *and* (IEA, 2014)

b) *Renewable energy subsidies based on Shen & Luo (2015) and IEA (2014) GHG emissions based on* (Coady, Parry, Sears, & Shang, 2015) *and Authors' calculations*

c) *Producer subsidies based on (Xue et al., forthcoming)*

d) *Consumer subsidies based on Lin & Ouyang (2014) and IEA (2014)*

e) *GHG emissions based on Coady, Parry, Sears, & Shang (2015) and Authors' calculations*

f) *Air pollution based on Coady, Parry, Sears, & Shang (2015), NRDC (2014) and Chinese Academy for Environmental Planning (2014)*

Policies for financially sustainable electricity sectors

1. **Transparency** — **How much does it cost? Who pays? And who benefits?**

   Public debate begins with knowledge of how the sector is working

2. **Subsidy reform** — **Are electricity subsidies a good use of public money? Do they actually reach the intended beneficiaries?**

   If subsidies are justified then they should at least be well targeted

3. **Externalities** — **Do subsidies promote positive economic and social outcomes?**

   Are we paying the polluter?

Conclusions

1. A financially sustainable electricity sector strongly supports development.

2. Electricity sector policies may solve one aspect of financial sustainability but create problems elsewhere. Policies must be designed with social and environmental impacts in mind.

3. It may be legitimate to have some electricity sector subsidies to promote energy access, address environmental challenges or promote development.

4. Subsidising the retailer (as in Indonesia, Jordan, Tunisia, etc.) can preserve market signals and incentives to investors in capacity and the system.

5. Subsidies should be designed to maximise social and environmental benefits. Paying the polluter is hard to justify. Many electricity consumers can pay full cost.

6. Subsidies to coal-fired electricity generation are costly, promote pollution and create a barrier to renewable technologies