

REVISTA BRASILEIRA DE POLÍTICAS PÚBLICAS
BRAZILIAN JOURNAL OF PUBLIC POLICY

**Shango Unchained? State
In(Capacity), Urban Bias, and the
Power Africa Initiative**

Tom Brower

Sumário

CRIMES DE RESPONSABILIDADE DO PRESIDENTE DA REPÚBLICA.....	2
Carlos Ayres Britto	
PERDA DE MANDATO PARLAMENTAR POR FORÇA DE CONDENAÇÃO CRIMINAL NA JURISPRUDÊNCIA DO SUPREMO TRIBUNAL FEDERAL.....	9
José Levi Mello do Amaral Júnior	
PODER NORMATIVO DAS CORTES CONSTITUCIONAIS: O CASO BRASILEIRO.....	16
Inocência Mártires Coelho	
PROCESSO LEGISLATIVO MUNICIPAL.....	29
José Levi Mello do Amaral Júnior	
PRIMEIRAS LINHAS SOBRE A OPÇÃO POLÍTICO-CRIMINAL DA DESERÇÃO MILITAR: A NECESSÁRIA CONTRIBUIÇÃO DAS POLÍTICAS PÚBLICAS.....	42
Antonio Henrique Graciano Suxberger e Danilo Gustavo Vieira Martins	
IMPLICAÇÕES DO DIREITO AO VOTO AOS IMIGRANTES: AMEAÇA À SOBERANIA NACIONAL OU EFETIVAÇÃO DE UM DIREITO FUNDAMENTAL?	58
Juliana Cleto	
CRIMEN, DESEMPLEO Y ACTIVIDAD ECONÓMICA EN CHILE.....	81
Sergio Zuñiga-Jara, Sofía Ruiz Campo e Karla Soria-Barreto	
O IMPACTO DE DIFERENTES TIPOS DE REPRESSÃO LEGAL SOBRE AS TAXAS DE HOMICÍDIO ENTRE OS ESTADOS BRASILEIROS	100
Adolfo Sachsida, Mário Jorge Cardoso de Mendonça e Tito Belchior Silva Moreira	
ANÁLISE DOS IMPACTOS DIRETOS E INDIRETOS DO PROGRAMA DE P&D DA ANEEL NO SETOR ELÉTRICO: DIFERENÇAS COM OS EUA.....	124
Igor Polezi Munhz, Alessandra Cristina Santos Akkari e Neusa Maria Bastos Fernandes dos Santos	
SHANGO UNCHAINED? STATE IN(CAPACITY), URBAN BIAS, AND THE POWER AFRICA INITIATIVE .	146
Tom Brower	
LEVANDO O ORÇAMENTO A SÉRIO COMO INSTRUMENTO DE CONTROLE DE POLÍTICAS PÚBLICAS	179
Andre Bogossian	

ESTIMATIVA DE DEMANDA PELA FORMALIZAÇÃO DA ECONOMIA INFORMAL NO AGRESTE PERNAMBUCANO: UMA APLICAÇÃO DO MÉTODO DE VALORAÇÃO CONTINGENTE.....	200
Monaliza de Oliveira Ferreira e Kelly Samá Lopes de Vasconcelos	
IMPLICAÇÕES DO PROGRAMA NACIONAL DE ALIMENTAÇÃO ESCOLAR (PNAE) NA RENDA E ORGANIZAÇÃO DE AGRICULTORES FAMILIARES.....	221
Nádia Kunkel Sziwelski, Carla Rosane Paz Arruda Teo, Luciara de Souza Gallina, Fabiula Grahl e Cimara Filippi	
DESENVOLVIMENTO DAS FAMÍLIAS E A POBREZA NO NORDESTE DO BRASIL.....	241
Nadja Simone Menezes Nery de Oliveira, Solange de Cassia Inforzato de Souza e Aricieri Devidé Junior	
EFEITOS COLATERAIS DA MINERAÇÃO NO MEIO AMBIENTE	264
Márcio Oliveira Portella	
PARTICIPAÇÃO POPULAR E ACESSO À INFORMAÇÃO AMBIENTAL PARA PRESERVAÇÃO DO MEIO AMBIENTE ECOLOGICAMENTE EQUILIBRADO	278
Luciano Marcos Paes	
POLÍTICAS PÚBLICAS PARA A FORMAÇÃO E AVALIAÇÃO DE MAGISTRADOS: A CONTRIBUIÇÃO DA EDUCAÇÃO JUDICIAL ATRAVÉS DAS ESCOLAS DE MAGISTRATURA.....	289
Flávio José Moreira Gonçalves	
RESENHAS	
SIMPLER: THE FUTURE OF GOVERNMENT, DE CASS SUSTEIN	316
Veyzon Campos Muniz	

Shango Unchained? State In(Capacity), Urban Bias, and the Power Africa Initiative*

Tom Brower**

ABSTRACT

In the midst of an energy crisis, sub-Saharan Africa is a global outlier with respect to power infrastructure and is literally without power. Nearly 600 million Africans—roughly two-thirds of the region—currently lack access to consistent, reliable, and affordable electricity, constituting a significant barrier to economic and social development, the deprivation of a number of socio-economic rights, and a cause of environmental degradation. The Power Africa Initiative, announced in June 2013, seeks to double access to power in sub-Saharan Africa over the next five years through an innovative public-private partnership between United States governmental agencies, private sector energy and infrastructure firms, and six African governments. This paper fills a gap in both the legal and policy literatures by identifying the implementation challenges to Power Africa and the broader theoretical question of the institutional and regulatory obstacles to power sector reform and development in sub-Saharan Africa. Drawing on the political economy and international development literatures, this paper contends that low state capacity and the presence of urban bias in African states represent significant implementation challenges to Power Africa. Specifically, weak and incapacitated state apparatuses and a lack of state autonomy vis-à-vis urban elites have created centralized hybrid power markets and regulatory frameworks that are systematically biased against the extension of electricity into rural areas and have marginalized independent power producers (IPPs) and potential rural consumers. Ultimately, without additional institutional and regulatory reforms, the core goal of Power Africa—rural electrification—will be significantly limited by a lack of commercial sustainability for independent power projects and a lack of consumer affordability to access power.

Keywords: access to electricity, public-private partnership, Power Africa initiative, public policy, public reform

“... And I have to say, those who are involved in this process, they continually tell us the problem is not going to be private-sector financing. The problem is going to be getting the rules right, creating the framework whereby we can build to scale rapidly.”

United States President Barack Obama, speaking on electricity access in Africa,

Dar es Salaam, Tanzania, 2013

“There you have it—reforms on unprepared ground, and copied from foreign institutions as well—nothing but harm!”

Fyodor Dostoevsky, *The Brothers Karamazov*

* Recebido em 02/03/2015
Aprovado em 13/04/2015

** Master of Arts in Political Science, Indiana University (2012). Juris Doctor, University of Virginia School of Law (2015). E-mail: tb2eh@virginia.edu

1. INTRODUCTION

Shango exists in Yoruba ritual thought as the deity of thunder and lightning. Although the patron deity of the Old Oyo Empire was established in the fourteenth century, the potency of the belief in the powers of Shango has continued to present day. A sculpture created in his image stands publicly at the Marina in Lagos, Nigeria, as the symbol of the Power Holding Company of Nigeria, Nigeria's public power utility agency.¹ Shango would undoubtedly be displeased with the current state of sub-Saharan Africa, as the region is a "global outlier with respect to power infrastructure and is literally without power."² The power crisis in sub-Saharan Africa is best conceptualized as a "paradox of plenty."³ Despite being endowed with abundant renewable energy resources,⁴ nearly 600 million people in sub-Saharan Africa—roughly two-thirds of the region—lack access to electricity.⁵ The per capita installed power generation capacity in sub-Saharan Africa is approximately one-third of South Asia's and about one-tenth of Latin America's.⁶ Even compared with other country groups in the same income bracket, sub-Saharan Africa's power generation capacity growth is barely half of that of other developing regions.⁷ Sub-Saharan Africa is the only world region in which per capita consumption of electricity is actually decreasing over time.⁸ Within the region, significant disparities exist between urban and rural access to electricity, with rural electrification rates routinely below 5%.⁹ Despite significant power sector reforms beginning in the 1980s and the provision of extensive subsidies, electrification rates have not improved, and electrical utilities have operated in a state of persistent dysfunction.¹⁰ Indeed, access to electricity is a "particularly African problem."¹¹

In light of the ongoing lack of access to electricity in the region and its significant micro- and macro-economic developmental effects, critics have called for additional reforms to pay explicit attention to institutional and financing mechanisms for increasing access to electricity.¹² According to the International Energy Agency, sub-Saharan Africa will require more than \$300 billion in investment to achieve universal electricity

1 See IRELE, Abiola; JEYIFO, Biodun (Ed). *THE OXFORD ENCYCLOPEDIA OF AFRICAN THOUGHT* 334 . Oxford: Oxford University Press, 2010.

2 Anton Eberhard & Maria Shkaratan, Powering Africa: Meeting the Financing and Reform Challenge, 42 *ENERGY POL'Y* 9, 10 (2012).

3 See generally TERRY LYNN KARL, *THE PARADOX OF PLENTY: OIL BOOMS AND PETRO-STATES* (1997) (describing the paradox that countries with natural resource abundances tend to have lower levels of economic growth and worse development outcomes than countries with fewer natural resources).

4 See, e.g., Y. Azoumah et al., Sustainable Electricity Generation for Rural and Peri-Urban Populations of sub-Saharan Africa: the "Flexy-Energy" Concept, 39 *ENERGY POL'Y* 131, 132 (2011); Abeeku Brew-Hammond & Francis Kemausuor, Energy for All in Africa—to be or not to be?!, 1 *CURRENT OPINIONS ENVTL. SUSTAINABILITY* 83, 86 (2009), Y.S. Mohammed et al., Status of Renewable Energy Consumption and Developmental Challenges in Sub-Saharan Africa, 27 *RENEWABLE & SUSTAINABLY ENERGY REV.* 453, 456-60 (2013); ANTON EBERHARD ET AL., AFRICA'S POWER INFRASTRUCTURE: INVESTMENT, INTEGRATION, EFFICIENCY 1-2, 54 (2011); Uwe Deichman et al., The Economics of Renewable Energy Expansion in Rural Sub-Saharan Africa, 39 *ENERGY POL'Y* 215, 227 (2011).

5 INT'L ENERGY AGENCY (IEA). *World Energy Outlook*. Available in: <<http://www.worldenergyoutlook.org/resources/energydevelopment/energyaccessdatabase/>>. (last visited July 25, 2014) (hereinafter "WEO").

6 EBERHARD ET AL., *supra* note 4, at 2-3.

7 *Id.* at 3; see generally Tito Yepes et al., Making Sense of Africa's Infrastructure Endowment: A Benchmarking Approach (The World Bank, Policy Research Working Paper No. 4912, 2008).

8 EBERHARD ET AL., *supra* note 4, at 6. Notably, sub-Saharan Africa and South Asia were equal in their installed capacities during the 1980s.

9 Theo Chidiezie Chineke & Fabian M. Ezike, Political Will and Collaboration for Electric Power Reform through Renewable Energy in Africa, 38 *ENERGY POL'Y* 678, 683 (2010).

10 See Anton Eberhard et al., *Underpowered: The State of the Power Sector in Sub-Saharan Africa* 14-15 (The World Bank, Background Paper No. 6, 2008); EBERHARD ET AL., *supra* note 4, at 79-80, 88-89, 91; Morgan Bazilian et al., *Energy Access Scenarios to 2030 for the Power Sector in sub-Saharan Africa*, 20 *UTIL. POL'Y* 1, 2 (2012).

11 Mimi Alemayehou, Exec. Vice President, Overseas Private Inv. Corp., Testimony before the United States Senate Committee on Foreign Relations at the Hearing on the Power Africa Initiative (Mar. 26, 2014) (hereinafter "OPIC Testimony").

12 See Brew-Hammond & Kemausuor, *supra* note 4, at 84; Patricia Nelson, *An African Dimension to the Clean Development Mechanism: Finding a Path to Sustainable Development in the Energy Sector*, 32 *DENV. J. INT'L L. & POL'Y* 615, 626 (2004).

access by 2030.¹³ The Power Africa Initiative (Power Africa or the Initiative), announced in South Africa in June 2013 by President Obama, seeks to double access to power in sub-Saharan Africa by adding more than 10,000 megawatts (MW) of clean, efficient electricity generation capacity over the next five years.¹⁴ Power Africa aims to extend electrical access to 20 million Africans through an innovative and large-scale public-private partnership that focuses on private sector independent power facilities involving a dozen United States governmental agencies, private sector energy and infrastructure firms, and six African governments.

Testifying before the Senate Foreign Relations Committee's Subcommittee on Africa, Paul Hinks, CEO of Symbion Power and Chairman of the Corporate Council on Africa, noted that "[t]he focus in 2014 should be on addressing some of the significant challenges facing the Power Africa Initiative, in order to pave the way for more private-sector investment in the future."¹⁵ Less than a year into Power Africa, African bureaucracies have already been identified as a major obstacle to private sector power investment under Power Africa.¹⁶ The legal literature has devoted little attention to Power Africa as well as more generally to the issue of electrification and energy generation in sub-Saharan Africa. Although the policy literature has identified a number of institutional and regulatory problems associated with power sectors in sub-Saharan Africa, little attention has been paid to why these obstacles persist.

This paper addresses both the existing gap within the literature on the implementation challenges to Power Africa and the broader theoretical question of the institutional and regulatory obstacles to power sector reform and development in sub-Saharan Africa. Drawing on the political economy and international development literatures, I contend that low state capacity and the presence of urban bias in African states represent significant implementation challenges to Power Africa. Specifically, weak and incapacitated state apparatuses and a lack of autonomy vis-à-vis urban elites have created centralized hybrid power markets and regulatory frameworks that are systematically biased against the extension of electricity into rural areas and have marginalized independent power producers (IPPs) and potential rural consumers. Accordingly, this paper makes two important contributions to the literature by filling an empirical gap through an analysis of the implementation challenges of Power Africa and electrification reform in sub-Saharan Africa, and by introducing a multi-disciplinary theoretical framework to explain the creation of a legal and regulatory framework that is a considerable obstacle to the implementation of Power Africa and power sector reform more broadly.

This paper is organized as follows. Section II provides a background to the power crisis in sub-Saharan Africa and the motivation for Power Africa by reviewing the literature on energy and electrical infrastructure as inputs for economic, environmental, and social development and as a human right. Section III outlines Power Africa and identifies its key actors, goals, and policy mechanisms. Section IV develops a theoretical framework of state capacity and urban bias as causal mechanisms for the creation of hybrid power markets and regulatory frameworks that marginalize IPPs and deter the extension of electrical access to rural areas. Three empirical sections follow. Section V links issues of state capacity and urban bias to the institutional structures of the power sectors and electrical markets in sub-Saharan Africa. Section VI introduces princi-

13 See THE WHITE HOUSE, *Fact Sheet: Power Africa* (June 30, 2013), Available in: <<http://www.whitehouse.gov/the-press-office/2013/06/30/fact-sheet-power-africa>>; EBERHARD ET AL., *supra* note 4, at 149.

14 U.S. AGENCY FOR INT'L DEV. (USAID), *Power Africa*. Available in: <<http://www.usaid.gov/powerafrica>> (last visited July 25, 2014).

15 Paul Hinks, Chief Exec. Officer of Symbion Power, Testimony before the United States Senate Committee on Foreign Relations at the Hearing on the Power Africa Initiative (Mar. 26, 2014) (hereinafter "Hinks Testimony").

16 See e.g., Immaculate Karambu, *Bureaucracy Frustrating the Work of Power Agency*, DAILY NATION (Mar. 22, 2014). Available in: <<http://www.nation.co.ke/business/Bureaucracy-frustrating-the-work-of-power-agency-/-/996/2254042/-/51jfee/-/index.html>> (noting that Earl Gast, USAID's Assistant Administrator for Africa, declared that the pace of private sector investment has been hurt by an unfriendly regulatory environment); *Power Africa: Market Reactions to the Obama Initiative*, PROJECT FINANCE NEWSWIRE (Chadbourne & Parke LLP), Dec. 2013, at 32 (noting that Paul Hinks believes that the big challenge of Power Africa is navigating the bureaucracies of many African countries); Hinks Testimony, *supra* note 15 (noting the creditworthiness of the power off-taker as a serious concern).

ples and models of federalism to understand how the centralization of electricity infrastructure deters further rural electrification. Section VII extends this theoretical framework to the regulatory sphere, contending that the existence of urban bias foments a regulatory framework for power that limits the commercial sustainability of private sector power projects and limits rural electrification. Section VIII concludes and offers policy recommendations and implications for future research.

2. EMPOWERING DEVELOPMENT: THE IMPETUS FOR POWER AFRICA

This section identifies the impetus for and importance of the Power Africa Initiative. First, context and background to sub-Saharan Africa's energy crisis is provided, describing both regional trends in a lack of access to electricity and low installation capacity as well as staggering intra-regional differences in access between urban and rural areas. Second, a review of the literature clearly indicates the importance of consistent access to electricity with respect to economic, environmental, and social development, particularly through the mechanisms of macroeconomic growth, firm productivity, improvements to human capital stocks and labor productivities, and lower levels of deforestation and greenhouse gas emissions. Additionally, the human rights literature emphasizes the importance of access to electricity as being integral to the realization of a number of existing socio-economic rights, specifically rights to gender equality and the right to adequate housing.

Shango in chains: the current state of african power

Crisis and paradox best characterize the state of power infrastructure in sub-Saharan Africa. Nearly half of the 1.2 billion people globally without access to electricity reside in sub-Saharan Africa.¹⁷ Only 32% of sub-Saharan Africans have access to electricity, and 79% still rely on traditional use of biomass for cooking, establishing it as the most power-impooverished region in the world.¹⁸ By comparison, access to electricity is 65% in South Asia,¹⁹ 90% in East Asia,²⁰ and 95% in Latin America.²¹ Additionally, sub-Saharan Africa has the lowest power generation capacity of any world region, and capacity growth has stagnated relative to other developing regions.²² The combined power generation capacity of sub-Saharan Africa is sixty-eight gigawatts (GW), the equivalent of Spain.²³ If South Africa is excluded, the total falls to twenty-eight GW, the equivalent of Argentina.²⁴ Even this data may be an overstatement because as much as 25% of installed capacity is operational due to aging power plants and a lack of maintenance.²⁵

To paint an even dimmer picture, the lack of access to electricity is significantly disparate between urban and rural areas.²⁶ Approximately 60% of urban populations have access to electricity compared to less than

17 WEO, *supra* note 5.

18 *Id.* For citations of similar statistics, see Bazilian et al., *supra* note 10, at 4; Brew-Hammond & Kemasuor, *supra* note 4, at 83; Raffaella Centurelli, ENERGY POVERTY: CAN WE MAKE MODERN ENERGY ACCESS UNIVERSAL? FOCUS ON FINANCING APPROPRIATE SUSTAINABLE ENERGY TECHNOLOGIES, 22 COLO. J. INT'L ENVTL. L. & POL'Y 219, 221 (2011); Youba Sokona et al., Widening Energy Access in Africa: Towards Energy Transition, 47 ENERGY POL'Y 3, 7 (2012); EBERHARD ET AL., *supra* note 4, at 5.

19 EBERHARD ET AL., *supra* note 4, at 5.

20 *Id.*

21 WEO, *supra* note 5.

22 *See* EBERHARD ET AL., *supra* note 4, at 1; Sokona et al., *supra* note 18, at 7.

23 EBERHARD ET AL., *supra* note 4, at 2.

24 *Id.*

25 *Id.*

26 *See* Abeeku Brew-Hammond, *Energy Access in Africa: Challenges Ahead*, 38 ENERGY POL'Y 2291, 2293 (2010); Charles Mooga Haanyika, *Rural Electrification Policy and Institutional Linkages*, 34 ENERGY POL'Y 2977, 2977 (2006); Stephen Karekezi & John Kimani, *Status of Power Sector Reform in Africa: Impact on the Poor*, 30 ENERGY POL'Y 923, 924 (2002).

15% of rural populations in sub-Saharan Africa.²⁷ Rural electrification levels routinely fall below 5%.²⁸ Compared to the rest of the world, there are both lower levels of access in absolute terms as well as higher levels of urban-rural disparity.²⁹ Consistent with this urban-rural disparity, access to electricity varies significantly based on income.³⁰ Only 4% of the lowest income quintile has access to electricity compared to 74% of the highest income quintile in sub-Saharan Africa.³¹

In addition to a dearth of access, sub-Saharan Africa's power infrastructure is (in)famously unreliable, as national electricity grids are "generally bedeviled with intermittent power supply and sometimes power rationing."³² Manufacturing enterprises experience power outages of fifty-six days per year on average.³³ For instance, according to World Bank enterprise survey data, firms in Senegal, Tanzania, and Burundi experienced power outages for an average of 45, 63, and 144 days, respectively.³⁴ By comparison, a typical power security standard in the United States is one day in ten years.³⁵

Unfortunately, the power crisis in sub-Saharan Africa is a worsening problem. Drought has seriously reduced the power available to countries with significant hydropower installments and that are dependent on water as an input to power production.³⁶ High and volatile international oil prices have put pressure on oil-importing countries, especially those dependent on diesel and heavy fuel oil for power generation.³⁷ Military conflict has severely damaged or destroyed much of the infrastructure in a number of countries, including the Central African Republic, Liberia, Sierra Leone, and Somalia.³⁸ With a business as usual approach, 40% of African countries will not reach the goal of universal access to electricity by 2050.³⁹ Sub-Saharan Africa is the only region in which per capita consumption of electricity is dropping over time.⁴⁰ Projecting present electrification rates and population growths, more people in sub-Saharan Africa will be without electricity in 2030 than today.⁴¹

The paradoxical part of sub-Saharan Africa's power crisis is the significant natural resource endowments that can fuel electric power generation.⁴² Specifically, the literature has focused on the renewable energy potential that is many times the current energy consumption of African states.⁴³ Sub-Saharan Africa has sig-

27 Raluca Golumbeanu & Douglas Barnes, *Connection Charges and Electricity Access in Sub-Saharan Africa* 3-4 (The World Bank, Policy Research Working Paper No. 6511, 2013).

28 Chineke & Ezike, *supra* note 9, at 683.

29 See Golumbeanu & Barnes, *supra* note 27, at 3-4.

30 A. Estache, *What do we know about Sub-Saharan Africa's Infrastructure and the Impact on its 1990s Reforms?* 33, 40 (The World Bank, Draft Working Paper, 2005).

31 Gisela Prasad, *Improving Access to Energy in sub-Saharan Africa*, 3 CURRENT OPINIONS ENVTL. SUSTAINABILITY 248, 249 (2011).

32 Brew-Hammond & Kemausuor, *supra* note 4, at 83. See also Eberhard et al., *supra* note 10, at v, 10-11; EBERHARD ET AL., *supra* note 4, at 7-8.

33 Eberhard et al., *supra* note 10, at v, 4.

34 EBERHARD ET AL., *supra* note 4, at 7.

35 Eberhard et al., *supra* note 10, at v-vi.

36 See EBERHARD ET AL., *supra* note 4, at 12; Eberhard et al., *supra* note 10, at 13.

37 See *id.*

38 See EBERHARD ET AL., *supra* note 4, at 12; Eberhard et al., *supra* note 10, at 13.

39 Golumbeanu & Barnes, *supra* note 4, at 4.

40 See EBERHARD ET AL., *supra* note 4, at 6; Eberhard & Shkaratan, *supra* note 2, at 9.

41 Prasad, *supra* note 31, at 248.

42 See Katharine Gratwick & Anton Eberhard, *An Analysis of Independent Power Projects in Africa: Understanding Development and Investment Outcomes* 16 (Mgmt. Program in Infrastructure Reform & Reg., Working Paper, 2007); EBERHARD ET AL., *supra* note 4, at 2.

43 See Deichman et al., *supra* note 4, at 2.

nificant hydro,⁴⁴ biomass,⁴⁵ solar,⁴⁶ geothermal,⁴⁷ and wind resources.⁴⁸ For instance, Namibia has an annual potential production of 100 times its current energy consumption, a statistic more driven by high potential production than low consumption.⁴⁹ Median countries, such as Senegal, Sierra Leone, and Benin, have a production capacity of ten-to-twelve times current consumption.⁵⁰ These resources are particularly valuable due to the increasing premium commanded by zero- or low-carbon renewable energies based on their abilities to reduce global greenhouse gas emissions and the cost volatility and geopolitical issues associated with fossil fuels.⁵¹

Economic, environmental, and social development

Energy poverty, defined as the “absence of sufficient choice in accessing adequate, affordable, reliable, high quality, safe, and environmentally benign energy services to support economic and human development”,⁵² has serious implications for development on both positive economic and normative grounds. Not only does a lack of access to electricity have significant effects on the economic and social development of individuals, households, and businesses, it also undermines the enjoyment of a wide range of human rights, particularly those relating to the improvement of living standards.⁵³ It also has significant environmental implications pertaining to forest management and greenhouse gas emissions, critical components of climate change. Over the past twenty years, there has been an abundant and growing literature that has focused on the positive effects of energy and energy infrastructure on economic growth and development.⁵⁴ Although energy has no intrinsic value, access to the products and lifestyle changes that the availability of adequate modern energy services provides has established energy as one of the “essential inputs for socioeconomic development.”⁵⁵ The most evident link between energy infrastructure and income is the productivity effect in a production function framework where an increase in the quantity of infrastructure raises the marginal productivity of other factors.⁵⁶

The literature identifies electrical energy and electric power infrastructure as particularly significant to economic growth and development. Underinvestment in electricity and weak energy infrastructures have caused poor economic performance and constrain future development in sub-Saharan Africa.⁵⁷ Calderón

44 See Azoumah, *supra* note 4, at 132; Brew-Hammond & Kemausuor, *supra* note 4, at 86; Mohammed et al., *supra* note 4, at 459-60; EBERHARD ET AL., *supra* note 4, at 2.

45 See Brew-Hammond & Kemausuor, *supra* note 4, at 86; Mohammed et al., *supra* note 4, at 456-58; Azoumah et al., *supra* note 4, at 132.

46 See Azoumah, *supra* note 4, at 132; Brew-Hammond & Kemausuor, *supra* note 4, at 86; Chineke & Ezike, *supra* note 9, at 679; Mohammed et al., *supra* note 4, at 458-59; EBERHARD ET AL., *supra* note 4, at 2.

47 See Brew-Hammond & Kemausuor, *supra* note 4, at 86; Mohammed et al., *supra* note 4, at 460; EBERHARD ET AL., *supra* note 4, at 2.

48 See Azoumah et al., *supra* note 4, at 132; Brew-Hammond & Kemausuor, *supra* note 4, at 86; EBERHARD ET AL., *supra* note 4, at 2.

49 Deichman et al., *supra* note 4, at 2.

50 *Id.*

51 See *id.*; Sokona et al., *supra* note 18, at 6.

52 Amulya K.N. Reddy, *Energy and Social Issues*, in UNITED NATIONS DEVELOPMENT PROGRAM, WORLD ENERGY ASSESSMENT: ENERGY & THE CHALLENGE OF SUSTAINABILITY 44 (2000). Available at: <www.undp.org/energy/activities/wea/drafts-frame.html>.

53 See Jenny Sin-hang Ngai, *Energy as a Human Right in Armed Conflict: A Question of Universal Need, Survival, and Human Dignity*, 37 BROOK. J. INT'L L. 579, 581 (2012).

54 See, e.g., Sokona et al., *supra* note 18, at 3 (collecting literature); Smail Khennas, *Understanding the Political Economy and Key Drivers of Energy Access in Addressing National Energy Access Priorities and Policies: African Perspective*, 47 ENERGY POL'Y 21, 21 (2012); Mohammed et al., *supra* note 4, at 453, 455; Vivien Foster & Jevgenijs Steinbuckis, *Paying the Price for Unreliable Power Supplies: In-House Generation of Electricity by Firms in Africa* 2 (The World Bank, Policy Research Working Paper No. 4913, 2009).

55 Brew-Hammond, *supra* note 26, at 2291; see also Adrian J. Bradbrook et al., *A Human Dimension to the Energy Debate: Access to Modern Energy Services*, 26 J. ENERGY & NAT. RESOURCES L. 526, 529 (2008) (emphasizing energy services).

56 See Paul Cook, *Infrastructure, Rural Electrification, and Development*, 15 ENERGY FOR SUSTAINABLE DEV. 304, 305 (2011); Stephen R. Tully, *The Contribution of Human Rights to Universal Energy Access*, 4 NW. U. J. INT'L HUM. RTS. 518, 519 (2006). But see Cook, *supra* note 56, at 306; Deichman et al., *supra* note 4, at 5 (noting an endogeneity issue).

57 See, e.g., H. Esfahani & M. Ramirez, *Institutions, Infrastructure, and Economic Growth*, 70 J. DEV. ECON. 443, 443 (2010).

finds that if African countries were to catch up with the regional leader, Mauritius, in terms of infrastructure stock and quality, their per capita economic growth rates would increase by an average of 2.2% per year.⁵⁸ Catching up with the East Asian median country, the Republic of Korea, would bring gains of 2.6% per year.⁵⁹ Indeed, in sub-Saharan Africa, “the most expensive electricity is no electricity at all.”⁶⁰

In addition to productivity increases, access to electricity helps address a plethora of social development goals and helps to build and develop human capital.⁶¹ Myriad improvements to health outcomes are attributable to access to electricity.⁶² Access to modern forms of energy is essential for the provision of clean water and sanitation.⁶³ A reduction in the use of biomass for heating and cooking reduces the incidences of eye problems, burns, respiratory illnesses, and cancer associated with combustion of these materials.⁶⁴ Electricity addresses the incidences of HIV/AIDS, malaria, and other diseases by improving the healthcare infrastructure by enabling health clinics and hospitals to refrigerate vaccines, boil water, sterilize equipment, incinerate used syringes, provide light, and transport patients.⁶⁵ Greater access to electricity has been also linked to better educational outcomes such as literacy rates and primary school completion rates.⁶⁶ Higher quality lighting allows for more time for reading and studying in the absence of sunlight.⁶⁷ Additionally, the task of collecting fuel for traditional biomass energy sources or hauling water are time consuming processes that come with a high opportunity cost; access to electricity allows children to greatly reduce or eliminate such chores and spend more time attending school.⁶⁸

Reliance on traditional biomass also has significant and deleterious effects on the environment, particularly when wood and charcoal are used as fuels. Fuel wood collection is a core cause of tropical deforestation.⁶⁹ A number of negative environmental externalities are associated with deforestation, including soil salinization, desertification, and a loss of biological diversity.⁷⁰ Forests play a critical role in climate change by absorbing carbon dioxide; thus, poor forest management in order to support the charcoal industry runs counter to the reducing emissions from deforestation and forest degradation (REDD) mechanism of the United Nations Framework Convention on Climate Change.⁷¹ Additionally, because of inefficient technology, the incomplete combustion of traditional biomass releases methane, a more potent greenhouse gas than carbon dioxide.⁷² The use of traditional and unsustainable biomass cooking energy fuels has significantly higher greenhouse gas emissions compared to liquefied petroleum gas and biogas.⁷³

58 Cesar Calderón, *Infrastructure and Growth in Africa* iv (The World Bank, Working Paper No. 3, 2008).

59 *Id.*

60 BERNARD TENENBAUM ET AL., FROM THE BOTTOM UP: HOW SMALL POWER PRODUCERS AND MINI-GRIDS CAN DELIVER ELECTRIFICATION AND RENEWABLE ENERGY IN AFRICA 239 (2014).

61 See Stephen Tully, *Access to Electricity as a Human Right*, 24 NETH. Q. HUM. RTS. 557, 560, 567 (2006); Bas J. van Ruijven et al., *Model-based Scenarios for Rural Electrification in Developing Countries*, 38 ENERGY 386, 386-87; Haanyika, *supra* note 26, at 2977.

62 See Golumbeanu & Barnes, *supra* note 27, at 4.

63 See Centurelli, *supra* note 18, at 222; Tully, *supra* note 56, at 520.

64 See Jennifer N. Brass et al., *Power for Development: A Review of Distributed Generation Projects in the Developing World*, 37 ANN. REV. ENV'T & RESOURCES 107, 117 (2012); Centurelli, *supra* note 18, at 225-26.

65 Tully, *supra* note 56, at 52.

66 See EBERHARD ET AL., *supra* note 4, at 16, 119 (collecting literature).

67 See Brass et al., *supra* note 64, at 116, 118; Adrian Bradbrook & Judith G. Gardam, *Placing Access to Energy Services within a Human Rights Framework*, 28 HUM. RTS. Q. 389, 395 (2006).

68 Golumbeanu & Barnes, *supra* note 27, at 4; Bradbrook & Gardam, *supra* note 67, at 395; Tully, *supra* note 56, at 520; Centurelli, *supra* note 18, at 227. See also *infra* notes 100-1.

69 Nogoye Thiam, *Towards a Sustainable Energy System for Africa: An African Perspective on Energy Security*, in FACING GLOBAL ENVIRONMENTAL CHANGE 448 (Hans Günter Brauch et al., eds. 2009).

70 See *id.*; Nicasius Achu Check, *Climate Change and Water Degradation*, in AFRICA IN A CHANGING GLOBAL ENVIRONMENT: PERSPECTIVES ON CLIMATE CHANGE ADAPTATION AND MITIGATION STRATEGIES IN AFRICA 14 (Shingirirai Savious Mutanga et al., eds. 2013).

71 See Shakespear Mudombi, *Exploring the Challenges and Opportunities for Low Carbon Climate Resilient Development in Africa*, in AFRICA IN A CHANGING GLOBAL ENVIRONMENT: PERSPECTIVES ON CLIMATE CHANGE ADAPTATION AND MITIGATION STRATEGIES IN AFRICA 154 (Shingirirai Savious Mutanga et al., eds. 2013).

72 GLOBAL ENERGY ASSESSMENT, GLOBAL ENERGY ASSESSMENT: TOWARD A SUSTAINABLE FUTURE 183 (2012).

73 *Id.*

Energy poverty has a disproportionate effect on women, as they are often responsible for collecting firewood, hauling water, and cooking.⁷⁴ As the first female President of an African state, Liberian President Ellen-Johnson Sirleaf, noted,

I'm particularly concerned about the disproportionate impact energy poverty has on women and girls. In many places without power, women and girls are forced to spend hours each day in the time-consuming task of hunting for fuel and firewood—often a key reason that girls spend less time in school than boys. Women are also disproportionately affected by respiratory illness as a result of indoor air pollution from open fires and kerosene used for cooking, heating, and lighting. Even the simple act of being outdoors becomes fraught with danger for women and girls in some places when the sun goes down and there are no streetlights.⁷⁵

Accordingly, the economic and social benefits of access to electricity provide the greatest private return to women.⁷⁶ There is strong empirical support linking access to electricity with improvements to female labor outcomes⁷⁷ and service-provision, particularly maternal health.⁷⁸

At the firm level, the notorious unreliability⁷⁹ of electricity and the prevalence of outages in the region represent significant welfare losses.⁸⁰ Frequent power outages result in significant losses in terms of foregone sales and damaged equipment. Firms experiencing frequent power outages, defined as more than sixty days per year, lose 10-12% of their sales, twice as much as firms that have fewer than fifteen outages per year.⁸¹ Equipment damage traceable to power outages is about twice as high for firms that suffer frequent outages as for firms that suffer few outages.⁸² Losses due to power outages are equivalent to 6% of turnover on average for firms in the former sector and as much as 16% of turnover for informal sector enterprises that lack backup generators.⁸³

These costs have significant implications for international investment and business development. In most countries in sub-Saharan Africa, infrastructure accounts for 30-60% of the effect of investment climate on firm productivity.⁸⁴ In half of the countries analyzed, the power sector accounted for 40-80% of the infrastructure effect.⁸⁵ According to the World Bank, over half of firms in Africa identify poor availability of electricity as a major constraint for doing business.⁸⁶ Ultimately, the extension and provision of reliable electricity serves as a catalyst for increased firm productivity and gross revenue gains.⁸⁷

Powering human rights

With a more normative focus, the literature has also advocated that access to reliable, sustainable, and affordable electricity be provided as public good as well as conceptualized and incorporated into the human

74 See Ngai, *supra* note 53, at 581-82; Tully, *supra* note 56, at 538-39.

75 Ellen-Johnson Sirleaf, *Let's Power Africa*, FOREIGN POLICY (Aug. 29, 2013), Available in: <http://www.foreignpolicy.com/articles/2013/08/29/let_s_power_africa_ellen_johnson_sirleaf_liberia_energy>.

76 See Chineke & Ezike, *supra* note 9, at 683; Brass et al., *supra* note 64, at 117.

77 See, e.g., Taryn Dinkelman, *The Effects of Rural Electrification on Employment: New Evidence from South Africa*, 101 AM. ECON. REV. 3078, 3078 (2011).

78 See, e.g., D. Claus, *Involving the User: Community Based Management of Solar Home Systems in Indonesia*, 2 REFOCUS 18, 18; Tully, *supra* note 56, at 551.

79 See *supra* notes 32-35.

80 See Foster & Steinbuck, *supra* note 54, at 2; Golumbeanu & Barnes, *supra* note 27, at 4.

81 Foster & Steinbuck, *supra* note 54, at 13.

82 *Id.*

83 EBERHARD ET AL., *supra* note 4, at 7.

84 *Id.* at 17-18.

85 *Id.*

86 Sokona et al., *supra* note 18, at 7.

87 See generally C. Kirubi et al., *Community-based Electric Micro Grids can Contribute to Rural Development: Evidence from Kenya*, 37 WORLD DEV. 1208 (2009). But see Brass et al., *supra* note 64, at 117 (gathering literature that is skeptical of the relationship between distributed generation provision and new economic opportunities).

rights framework.⁸⁸ By conceptualizing access to electricity as a human right, pressure could be brought to bear at the national and international level for recognition of access to energy services as integral to the realization of the vast bulk of existing socio-economic rights.⁸⁹ Several states have recognized that electricity access may qualify as a human right. For example, French legislation “contributes to social cohesion by satisfying everyone’s right to electricity.”⁹⁰ South African law imposes duties upon electricity service providers to supply electricity “to every applicant who is in a position to make satisfactory arrangements for payment.”⁹¹ This obligation has been interpreted to mean that applicants enjoy a *prima facie* right entitling them to demand electricity once they have satisfied such supply conditions.⁹²

Although the major human rights instruments are silent on the point of access to electricity, the literature argues that it is an implicit attribute of a number of human rights, including non-discrimination, adequate living standards, housing, health, and sustainable development.⁹³ This line of argument draws from the International Covenant on Economic, Social and Cultural Rights (ICESCR), which requires that party states “recognize the right of everyone to an adequate standard of living . . . including adequate food, clothing and housing, and to the continuous improvement of living conditions”⁹⁴ and the Universal Declaration of Human Rights, which contains an identical list.⁹⁵ The Committee on Economic, Social and Cultural Rights (CESCR), responsible for overseeing the implementation of the ICESCR, expects party states to periodically submit information on household amenities such as heating and electricity.⁹⁶ Within this framework, electricity is principally considered under the right to adequate housing.⁹⁷ For instance, the Special Rapporteur on adequate housing has construed his mandate broadly such that this right includes access to essential civic services such as electricity.⁹⁸ Furthermore, at the national level, the South African Constitutional Court concluded that the right to adequate housing includes “access to services such as water, sewage, electricity and roads.”⁹⁹

Additionally, access to electricity has been explicitly recognized in the context of eliminating discrimination against women.¹⁰⁰ Article 14(2)(h) of the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) are obligated to “take all appropriate measures to eliminate discrimination against women in rural areas . . . and, in particular, shall ensure to such women the right . . . to enjoy adequate living conditions, particularly in relation to housing, sanitation, electricity and water supply, transport and communications.”¹⁰¹ Ultimately, given the exigency of energy poverty in sub-Saharan Africa, the positive economic and normative arguments in support of access to electricity, and the lack of initial reform success, developing a new approach to power sector reform is indeed a critical development objective.

88 See Brew-Hammond & Kemausuor, *supra* note 4, at 83; Tully, *supra* note 56, at 518; Tully, *supra* note 61, at 557; Stephen Tully, *The Human Right to Access Electricity*, 19 ELECTRICITY J., no. 3, 2006, at 30-31; Ngai, *supra* note 53, at 526.

89 Bradbrook et al., *supra* note 55, at 529.

90 Electricity Act, art. 1 (2000) (Fr.).

91 Electricity Act 41 of 1987 § 10(1) (1987) (S. Afr.).

92 Tully, *supra* note 56, at 545 (citing *Meyer v Moqhaka Local Municipality*, Case No 4008/2003, 24 (S. Afr. High Ct., Orange Free State Provincial Div.) (unreported per Rampai, J)).

93 Ngai, *supra* note 54, at 606; Stephen Tully, *The Human Right to Access Clean Energy*, 3 J. GREEN BUILDING 140 (2008); Bradbrook & Gardam, *supra* note 67, at 405; Tully, *supra* note 88, at 30, 38.

94 Int’l Covenant on Econ., Soc. & Cultural Rights, art. 11(1), 993 UNTS 3 (adopted Dec. 16, 1966 and entered into force Jan. 3, 1976).

95 Universal Declaration of Human Rights, art. 25.

96 Committee on Economic, Social and Cultural Rights, *Revised General Guidelines Regarding the Form and Contents of Reports to be Submitted by States Parties under Articles 16 and 17 of the ICESCR*, ¶ 3, U.N. Doc. E/C.12/1991/1 (June 17, 1991).

97 U.N. Comm. on Econ., Soc. and Cultural Rights (CESCR), *General Comment No. 4 on the Right to Adequate Housing Contained in Art XI(1) of the ICESCR*, ¶ 8(b), U.N. Doc. E/1992/23 (Dec. 13, 1991).

98 U.N. Commission on Human Rights, *Report of the Special Rapporteur on adequate housing as a component of the right to an adequate standard of living*, ¶¶ 35, 46(b), U.N. Doc. E/CN.4/2002/59 (Mar. 1, 2002) (prepared by Miloon Kothari).

99 *Gov’t of the Republic of S. Afr. v. Grootboom*, 2001 (1) SA 46 (CC), ¶ 37 (S. Afr.).

100 See Tully, *supra* note 88, at 38; Ngai, *supra* note 53, at 606; Lisa R. Pruitt, *Deconstructing CEDAW’s Article 14: Naming and Explaining Rural Difference*, 17 WM. & MARY J. WOMEN & L. 347, 359-60 (2011); Bradbrook et al., *supra* note 55, at 536-37.

101 Convention on the Elimination of All Forms of Discrimination Against Women, art. 14(2)(h), G.A. Res. 34/180, U.N. GAOR Supp. No. 46, 193, U.N. Doc. A/34/46 (adopted Dec. 18, 1979 and entered into force Sept. 3, 1981).

3. THE POWER AFRICA INITIATIVE

President Obama unveiled the Power Africa Initiative on June 30, 2013 in Cape Town, South Africa.¹⁰² Power Africa seeks to double access to power in sub-Saharan Africa by adding more than 10,000 MW of clean, efficient electricity generation capacity over the next five years.¹⁰³ Drawing on the considerable energy resources of the region, Power Africa seeks to unlock the substantial wind, solar, hydropower, natural gas, and geothermal resources in the region through expanding mini-grid and off-grid solutions, and building out power generation, transmission, and distribution structures.¹⁰⁴ Accordingly, Power Africa aims to make electricity access available for 20 million people and commercial entities.¹⁰⁵ In the first phase, Power Africa will partner with six nations: Ethiopia, Ghana, Kenya, Liberia, Nigeria, and Tanzania, the so-called “Power Six”.¹⁰⁶ These countries were selected because they have set ambitious goals in electric power generation, and are making utility and energy sector reforms to pave the way for investment and growth.¹⁰⁷ Power Africa will also partner with Uganda and Mozambique on responsible oil and gas resources management.¹⁰⁸ Thus, Power Africa confers a number of environmental benefits by not only moving the region away from traditional biomass that results in deforestation and higher emissions of greenhouse gases,¹⁰⁹ but also by leveraging the region’s copious renewable energy resources that have a considerably lower carbon footprint.

Power Africa stands out as a truly unique and innovative development program due to the leveraging of public, private, and multilateral actors, in addition to an emphasis on collaboration with African governments. The regional headquarters of Power Africa is Nairobi, Kenya, making Power Africa the first Presidential Initiative ever to be based outside the United States.¹¹⁰ Over the next five years, the United States plans to direct up to \$7 billion in government resources; this commitment has already been over-fulfilled with approximately \$7.8 billion in funding commitments declared by five federal agencies.¹¹¹ The lion’s share of the governmental resources will be administered through the Export-Import Bank of the United States (EXIM) to support American exports for the development of power projects.¹¹² EXIM’s specific mandate in sub-Saharan Africa is to support American job growth by providing American companies with collateral for loans in areas too risky to otherwise operate through two main financial instruments: direct loans and 100% loan guarantees.¹¹³ The Overseas Private Investment Corporation (OPIC), the United States Government’s development finance institution, has pledged \$1.5 billion to finance and insure African energy projects.¹¹⁴

102 See THE WHITE HOUSE, *supra* note 13; USAID, *supra* note 14; David Nakamura, *In Cape Town Speech, Obama to Announce ‘Power Africa’ Program*, WASH. POST (JUNE 30, 2013, 6:13 A.M.), Available in: <<http://www.washingtonpost.com/blogs/post-politics/wp/2013/06/30/obama-to-announce-electrical-access-program-for-africa/>>.

103 See USAID, *supra* note 14; Morgan Bazilian & Roger Pielke, Jr., *Making Energy Access Meaningful*, ISSUES SCI. & TECH., Summer 2013, at 77.

104 See USAID, *supra* note 14; Shamarukh Mohiuddin, *Expanding the Role of Microfinance in Promoting Renewable Energy Access in Developing Countries*, 11 GEO. PUB. POL’Y REV. 119, 120 (2005) (noting the synergy between renewable energies and mini-grid and off-grid technologies).

105 See USAID, *supra* note 14; THE WHITE HOUSE, *supra* note 13.

106 See THE WHITE HOUSE, *supra* note 13; Tony O. Elumelu, Chairman of Heirs Holdings & the Tony Elumelu Found., Testimony before the United States Senate Committee on Foreign Relations at the Hearing on the Power Africa Initiative (Mar. 26, 2014).

107 See THE WHITE HOUSE, *supra* note 13; Paul Hinks, Chief Exec. Officer of Symbion Power, Comments at Chadborne & Parke’s Fourth Annual Focus on Emerging Markets Conference (Mar. 20, 2014) (hereinafter “Chadbourne Conference”).

108 See THE WHITE HOUSE, *supra* note 13.

109 See *supra* notes 69-73.

110 See Earl Gast, Assistant Adm’r for Afr., U.S. Agency for Int’l Dev., Testimony before the United States Senate Committee on Foreign Relations at the Hearing on the Power Africa Initiative (Mar. 26, 2014) (hereinafter “USAID Testimony”); Yvone Kawira, *Nairobi to Host US’s Power Africa Project*, DAILY NATION (Nov. 20, 2013), <http://mobile.nation.co.ke/business/Nairobi-to-host-US-Power-Africa-project/-/1950106/2081840/-/format/xhtml/-/13kv0m3/-/index.html>; Chadbourne Conference, *supra* note 107.

111 See Kenneth W. Hansen & Rachel Rosenfeld, *Powering Africa*, PROJECT FINANCE NEWSWIRE (Chadbourne & Parke LLP), Aug. 2013, at 8.

112 See Chadbourne Conference, *supra* note 107.

113 See *id.*

114 OPIC Testimony, *supra* note 11.

OPIC already has a pipeline of African electricity projects that, if fully committed, would surpass their commitment.¹¹⁵ The Millennium Challenge Corporation (MCC) has committed \$1 billion through its country compacts to encourage new power generation, transmission, and distribution projects.¹¹⁶ MCC will also invest in energy infrastructure, policy and regulatory reforms and host government capacity building.¹¹⁷ The United States Agency for International Development (USAID) has pledged \$285 million to be focused on technical assistance and risk mitigation through mechanisms such as country-specific transaction advisers, as well as encouraging private sector transactions through direct grant financing and loan guarantees through their Development Credit Authority.¹¹⁸ OPIC and the United States Trade and Development Agency (USTDA) jointly committed to make available up to \$20 million in project preparation, feasibility study, and technical assistance grants to support the development of renewable energy projects.¹¹⁹ Lastly, the United States African Development Foundation has launched a \$2 million Off-Grid Energy Challenge to provide grants of up to \$100,000 to African-owned enterprises.¹²⁰

The private sector focus has distinguished Power Africa as a new model for development in action.¹²¹ At the time of this paper, the private sector founding partners have pledged to develop nearly ten GW of critical generation projects in five of the Power Africa countries, resulting in over \$14.7 billion in investment in these countries' power sectors.¹²² Private sector partners are also focused on mini-grid and distributed power services and infrastructure. Commitments sum to 700,000 new households and businesses served and over \$1.1 billion in investment.¹²³ This emphasis on IPPs constitutes an important form of private sector participation in Africa's power sector. With demand outstripping supply in many African countries, independent power projects are becoming a major source of new power generation capacity in these countries.¹²⁴ Additionally, participation of the private sector is important when electrifying remote villages, particularly with stand-alone systems.¹²⁵

Accordingly, the United States has a keen economic interest in Power Africa, namely, that many of the sponsors and developers of these energy and power projects are American companies. Several United States governmental agencies with significant involvement in Power Africa have institutional mandates to specifically support American companies.¹²⁶ Thus, while altruism and developmental goals are important, the potential for successful implementation increases due to the economic stake of American business in Power Africa. However, given the high level of American involvement through a predominantly free-market, private-sector driven approach, Power Africa could simply resemble another example of the broader neoliberal development paradigm that has been critiqued as benefiting developed nations at the expense of developing nations.¹²⁷ For instance, Power Africa has already been criticized for being a mechanism to "grease up" billions of dollars worth of deals for American corporations, such as General Electric.¹²⁸

115 *Id.*

116 *See* Hansen & Rosenfeld, *supra* note 111, at 9.

117 *Id.*

118 *See* Chadbourne Conference, *supra* note 107.

119 *See* Hansen & Rosenfeld, *supra* note 111, at 9.

120 *Id.*

121 *See* USAID Testimony, *supra* note 110; Chadbourne Conference, *supra* note 107.

122 U.S. AGENCY FOR INT'L DEV., Private Sector. Available in: <<http://www.usaid.gov/powerafrica/partners/private-sector>>. (last visited July 25, 2014).

123 *Id.*

124 Karekezi & Kimani, *supra* note 26, at 927.

125 *Id.* *See also* INT'L ENERGY AGENCY (IEA), COMPARATIVE STUDY ON RURAL ELECTRIFICATION POLICIES IN EMERGING ECONOMIES 100 (2010).

126 *See supra* notes 112-14. For instance, the OPIC requires a US nexus in order to qualify for a downstream loan. *See* Available in: <<http://www.opic.gov/sites/default/files/files/040313-callforproposals.pdf>>.

127 *See generally* DAVID HARVEY, A BRIEF HISTORY OF NEOLIBERALISM (2005); ANDRE GUNDER FRANK, CAPITALISM AND UNDERDEVELOPMENT IN LATIN AMERICA (1967); FERNANDO HENRIQUE CARDOSO & ENZO FALETTO, DEPENDENCY AND DEVELOPMENT IN LATIN AMERICA (1979); J. Samuel Valenzuela & Arturo Valenzuela, *Modernization and Dependency: Alternative Perspectives in the Study of Latin American Underdevelopment*, 10 COMP. POL., no. 4, 1978.

128 Christopher Helman, *Obama's 'Power Africa' Plan Greases Billions in Deals for General Electric*, FORBES (July 1, 2013, 12:39 P.M.), Available in: <<http://www.forbes.com/sites/christopherhelman/2013/07/01/with-power-africa-plan-obama-to-grease-billions>>.

Although Power Africa does not require implementing legislation, the Electrify Africa Act of 2013¹²⁹ (the Act) was introduced in the House of Representatives days before President Obama’s announcement in Cape Town. The purpose of the Act is to “establish a comprehensive United States Government policy to assist countries in sub-Saharan Africa to develop an appropriate mix of power solutions for more broadly distributed electricity access in order to support poverty alleviation and drive economic growth, and for other purposes.”¹³⁰ Congress declares that it is the policy of the United States to:

(1) encourage the installation of at least an additional 20,000 megawatts of electrical power in sub-Saharan Africa by 2020; (2) promote first-time access to electricity for at least 50,000,000 people in sub-Saharan Africa by 2020 in both urban and rural areas; and (3) promote efficient institutional platforms to provide electrical service to rural and underserved areas.¹³¹

Although the Act largely provides guidelines to USAID, OPIC, and USTDA that are already underway as part of the Initiative, the Act importantly amends the Foreign Assistance Act of 1961¹³² to direct the Board of Directors and the President of OPIC to issue policy guidance that permits significant investment in the electricity sector of the poorest and lowest pollution-emitting countries in a development-driven and environmentally sensitive manner.¹³³ This amendment provides OPIC with an exception to invest in energy projects that involve fossil fuels, which otherwise conflicts with OPIC’s internal directive that caps the total greenhouse gas emissions in their overall investment portfolio.¹³⁴

At a fundamental level, Power Africa seeks to extend access to reliable, sustainable, and affordable electricity through a concurrent top-down and bottom-up approach that is widely embraced by the literature.¹³⁵ On the centralized track, electrification is undertaken by national governmental entities such as the state-owned national utility, a rural electrification agency (REA), or the ministry of energy, acting alone or together.¹³⁶ Electrification occurs primarily through extension of the national grid.¹³⁷ In contrast, on the decentralized track, electrification is generally carried out through nongovernmental entities such as cooperatives, community user groups, or private entrepreneurs.¹³⁸ The decentralized model incorporates a number of different systems for electricity generation including isolated mini-grids that are a combination of a generating unit and a distribution system that operates separately from the national or regional grids and connected mini-grids that are distribution systems that are connected to, and may draw electricity from, the main grid.¹³⁹ This dual track emphasis, combined with the leveraging of private sector investment in the generation, distribution, and transmission of electricity in order to meet demand, epitomizes the use of non-traditional mechanisms to increase access to electricity, particularly in rural areas that face the highest costs in accessing the national grid.¹⁴⁰

However, while innovative, the structure of Power Africa is rife with implementation challenges. At the core of this multi-actor public-private partnership are looming concerns with respect to whether African governments can create a favorable and financially sustainable investment climate for private capital, and a legal and regulatory environment that not only allows investments to be profit-generating and commercially

in-deals-for-g-e/>.

129 Electrify Africa Act of 2013, H.R. 2548, 113th Congress (2013).

130 *Id.*

131 *Id.* § 4.

132 Foreign Assistance Act of 1961, Pub. L. 87-195, 75 Stat. 424-2 (1961).

133 Electrify Africa Act, *supra* note 129, § 8(c).

134 Bazilian & Pielke, Jr., *supra* note 103, at 78; TODD MOSS & BENJAMIN LEO, CTR. FOR GLOBAL DEV., MAXIMIZING ACCESS TO ENERGY: ESTIMATES OF ACCESS AND GENERATION FOR THE OVERSEAS PRIVATE INVESTMENT CORPORATION’S PORTFOLIO 1-4 (2014).

135 *See, e.g.*, TENENBAUM ET AL., *supra* note 60, at 1; Sokona et al., *supra* note 18, at 8; EBERHARD ET AL., *supra* note 4, at 103.

136 *See* TENENBAUM ET AL., *supra* note 60, at 1, 19, 28.

137 *Id.*

138 *Id.* at 1, 20, 28.

139 *Id.* at 43. Much of the nomenclature for this technology varies by region. Generally speaking, the term “mini-grid” is interchangeable with “small power producer” (SPP) and distributed generation (DG).

140 *See* Centurelli, *supra* note 18, at 234-35.

sustainable, but also provides the proper incentives and policy mechanisms for African households and businesses to afford accessing electricity. Furthermore, the dual centralized/decentralized nature of Power Africa foments questions of the political, legal, policy, and fiscal dynamics between national and subnational governments of African states as the centralized and decentralized electrification tracks are concurrently implemented and balanced. The next section develops these concerns in detail, drawing on the political economy and international development literatures in order to identify how variations of institutional capacity and autonomy present a substantial challenge to the implementation of Power Africa.

4. A THEORY OF STATE IN(CAPACITY) AND ELECTRIFICATION

Institutional design, governance, and public goods

This paper emphasizes the causal link between state capacity, state-society relations, and the creation of institutional and regulatory obstacles that represent significant implementation challenges to Power Africa. There is a considerable and growing literature that focuses on the effects of political regimes and institutional quality on public goods provision. Much of this literature focuses on the effect of regime type on human capital formation and social policies that affect human capital, specifically health and education. The literature overwhelmingly concludes that democratic regimes provide more services that produce improved health and education outcomes¹⁴¹ and make larger fiscal commitments to the health and education sectors.¹⁴² For instance, Stasavage addresses the effects of electoral competition on total, primary, and tertiary education spending in forty-four African nations from 1980 to 1996, finding that the shift to multiparty competition has resulted in increased total education spending by 1.1% of GDP and 4.4% of total public expenditures.¹⁴³ More specifically focusing on the quality of formal political institutions, physical capital, and infrastructure, Brower finds a statistically significant and robust relationship between the presence of high-functioning, democratic institutions and road density in sub-Saharan Africa.¹⁴⁴

Merely a year into Power Africa, African governments have already been identified as a major obstacle to private sector power investment under Power Africa, both in terms of navigating African bureaucracies¹⁴⁵ and dealing with an unfriendly regulatory environment.¹⁴⁶ These obstacles speak to the broader issue of governance, which is not only emerging as an international law issue that could take the shape of an *erga omnes* obligation,¹⁴⁷ but also a central issue for the implementation of Power Africa specifically and the development of energy infrastructure more broadly in sub-Saharan Africa.¹⁴⁸ Hyden defines governance as

141 See generally Matthew Baum & David Lake, *The Political Economy of Growth: Democracy and Human Capital*, 42 *AM. J. POL. SCI.*, no. 2, 2003; David Lake & Matthew Baum, *The Invisible Hand of Democracy: Political Control and the Provision of Public Services*, 34 *COMP. POL. STUD.*, no. 6, 2001; Mohsen Fardmanesh & Nader Habibi, *What is Vulnerable During Fiscal Retrenchment?*, 12 *ECON. & POL.*, no. 1, 2000.

142 See generally David Brown & Wendy Hunter, *Democracy and Human Capital Formation: Education Spending in Latin America, 1980-1997*, 37 *COMP. POL. STUD.*, no. 7, 2004; Robert Kaufman & Alexa Segura-Ubiergo, *Globalization, Domestic Politics, and Social Spending in Latin America*, 53 *WORLD POL.*, no. 4, 2001; BARRY AMES, *POLITICAL SURVIVAL: POLITICIANS AND PUBLIC POLICY IN LATIN AMERICA* (1987).

143 See generally David Stasavage, *Democracy and Education Spending in Africa*, 49 *AM. J. POL. SCI.*, no. 2, 2005; David Stasavage, *The Role of Democracy in Uganda's Move to Primary Education*, 43 *J. MODERN AFR. STUD.*, no. 1, 2005.

144 Tom Brower, *The Road Less Traveled: Institutional Quality and Road Provision in sub-Saharan Africa 17-19* (Apr. 28, 2012) (unpublished M.A. thesis, Indiana University) (on file with author and Indiana University Library system).

145 See, e.g., *supra* note 16.

146 Karambu, *supra* note 16; see also TENENBAUM ET AL., *supra* note 60, at 86.

147 THOMAS FRANCK, *FAIRNESS IN INTERNATIONAL LAW* 83-84 (1995).

148 See Francis N. Botchway, *The Role of the State in the Context of Good Governance and Electricity Management: Comparative Antecedents and Current Trends*, 21 *U. PA. J. INT'L ECON. L.* 781, 782-83 (2000) ("the critical variable for the success or failure of government participation is the presence or substantial absence of the tenets of good governance.").

that aspect of politics that aims to formulate and manage the rules of the political arena in which state and civil society actors operate and interact to make authoritative decisions. In more operational terms, governance refers to those measures that involve setting the rules for the exercise of power and settling conflicts over such rules. Such rules translate into constitutions, laws, customs, administrative regulations, and international agreements, all of which in one way or the other provide the framework for the formulation and implementation of policy decisions.¹⁴⁹

However, the concept of governance is murky and typically operationalized in an overbroad fashion, making it an unwieldy concept to subject to focused empirical analysis. Most of the work on governance appears satisfied with a description or provision of a shopping list of ingredients for good governance, such as accountability, transparency, anti-corruption, rule of law, advancement for women, democracy, and decentralization.¹⁵⁰ Accordingly, this paper draws upon two distinct and interrelated aspects of state capacity in order to provide a more concrete and institution-focused theoretical framework: *absolute state capacity*, which focuses on the extent to which the state bureaucracy is apolitical and technocratic, and *relative state capacity*, which focuses on the degree of autonomy that state institutions have vis-à-vis particularistic societal interests.¹⁵¹

Absolute State Capacity

Unsurprisingly, *absolute state capacity* developed out of the political economy literature that sought to open the “black box” of the state and analytically focus on the institutional structures and dynamics within the state apparatus itself.¹⁵² Absolute state capacity is “the measure of the ability of a government to implement its policies and accomplish its goals.”¹⁵³ The concept of state capacity is multi-dimensional; it is constituted by:

(1) *regulatory capacity*: the ability of the state to establish and enforce the rules that guide, or regulate, social behavior; (2) *administrative capacity*: the routine ability to manage the personnel and resources of the state and ensure accountability and efficiency in service delivery; (3) *technical capacity*: the expertise and knowledge required to make and implement technical decisions. . . as well as the policy tools and instruments necessary to implement those decisions effectively; and (4) *extractive capacity*, the ability of the state to raise the revenues it needs to pay for the expenses of implementing its policies and goals.¹⁵⁴

Of these four dimensions, regulatory capacity and administrative capacity are of greatest importance due to the ability of bilateral and multilateral donors to provide technical and financial assistance to overcome a dearth of technological expertise and revenue shortfalls.¹⁵⁵ This is consistent with USAID’s provision of technical assistance and risk mitigation through mechanisms such as country-specific transaction advisers in Power Africa.¹⁵⁶

Regulatory capacity largely focuses on the promotion of the rule of law.¹⁵⁷ Although the rule of law is an ex-

149 Goran Hyden, *Governance and the Reconstitution of Political Order*, in *STATE, CONFLICT AND DEMOCRACY IN AFRICA* 185 (Richard Joseph ed., 1999). See also GORAN HYDEN & MICHAEL BRATTON, *GOVERNANCE AND POLITICS IN AFRICA* 7 (1993) (defining governance as “the conscious management of regime structures with a view to enhancing the legitimacy of the public realm”).

150 See Botchway, *supra* note 148, at 161.

151 See D. MICHAEL SHAFER, *WINNERS AND LOSERS: HOW SECTORS SHAPE THE DEVELOPMENTAL PROSPECTS OF STATES* 13-18 (1994).

152 See generally Peter Evans, *The State as Problem and Solution: Predation, Embedded Autonomy, and Structural Change*, in *THE POLITICS OF ECONOMIC ADJUSTMENT* (Stephen Haggard & Robert Kaufman, eds. 1992); *BRINGING THE STATE BACK IN* (Peter Evans et al., eds. 1985).

153 Deborah Brautigam, *State Capacity and Effective Governance*, in *AGENDA FOR AFRICA’S ECONOMIC RENEWAL* 83 (Benno Ndulu & Nicolas van de Walle, eds. 1996).

154 *Id.*

155 See Tom Brower, Presentation at the Virginia Social Science Association Annual Conference: State Capacity Formation as Functions of Economic Crisis and International Actors: Ghana 1981-1992 (Apr. 5, 2004) (on file with author); EBERHARD ET AL., *supra* note 4, at 92.

156 See USAID, *supra* note 14.

157 See Nsongurua J. Udombana, *Articulating the Right to Democratic Governance in Africa*, 24 MICH. J. INT’L L. 1209, 1231 (2003) (contending that “[g]ood governance . . . must also be effective and equitable, in order to promote the rule of law”).

pansive concept¹⁵⁸ that can refer to sets of rules that bind governments and individuals,¹⁵⁹ the presence and quality of specific legal or political institutions,¹⁶⁰ or the adequate protection of equality or human rights,¹⁶¹ at its core, the rule of law has focused on subjecting the government to the same laws as ordinary people.¹⁶² Thus, the creation of institutional structures and mechanisms that establish a transparent, accountable, and stable state apparatus enhances a state's regulatory capacity. In the context of energy policy, which is characterized by long time horizons and requiring considerable capital investments that are illiquid *ex post*, investors need broad national stability grounded in the rule of law.¹⁶³ Thus, as regulatory capacity decreases, higher incidences of policy reversal and governmental arbitrariness represent significant political risks for private sector investors of Power Africa. If African governments create arbitrary policies that fail to make rural electrification profitable in the long-term for IPPs, Power Africa's chances for successful implementation plummet. Furthermore, because they often operate as off-takers to power purchase agreements (PPAs), the contracts that ensure a reliable stream of income for IPPs, it is essential that African governments remain accountable as contractual partners for Power Africa investors.

Administrative capacity focuses on the extent to which the state bureaucracy is insulated and autonomous from the rest of the politicized, and often particularistic, state apparatus. Accordingly, bureaucracies with high administrative capacity are characterized as apolitical, technocratic, meritocratic, and independent. These institutions ideally approximate the Weberian bureaucracy, the administrative apparatus that ensures the inherent guarantee of reliable formal expectations of the political authority without becoming integrated or identified with the politicians that operates based on legal-rational authority.¹⁶⁴ The bureaucratic ethic of technical skill and sense of duty over personal views¹⁶⁵ is an essential requirement for the inevitable regulation of an industry as technical as energy, and has wide ranging national and international implications.¹⁶⁶ For instance, the International Energy Agency identifies dedicated institutional structures that are independent from political agendas and electrification objectives that are not interfered with according to politicians' personal agendas as preconditions for successful rural electrification policies.¹⁶⁷ In the context of Power Africa, the state bureaucracy is responsible for establishing the regulatory framework that determines both the price at which energy is purchased from IPPs, how subsidies are structured, and the consumer's cost of connection to the grid. If the bureaucracy is politicized, these regulatory policies may be structured to both be financially unsustainable for IPPs and prevent consumers without access to electricity from gaining it. Politicization additionally further crystallizes existing cleavages and perpetuates existing infrastructural differences, preventing Power Africa from reaching its primary goal of an extension of electricity access.

Technical capacity refers to the skill and expertise required to implement state policy. In the context of energy infrastructure and rural electrification, technical capacity largely rests with the electricity regulators. Electricity regulators make three types of regulatory decisions: economic, technical, and process.¹⁶⁸ Econo-

158 See Rachel Kleinfeld, *Competing Definitions of the Rule of Law*, in PROMOTING THE RULE OF LAW ABROAD: IN SEARCH OF KNOWLEDGE 31 (Thomas Carothers, ed. 2006). For a taxonomy of various rule of law concepts, see Richard H. Fallon, Jr., "The Rule of Law" as a Concept in Constitutional Discourse, 97 COLUM. L. REV. 1, 11-24 (1997); see generally William C. Whitford, *The Rule of Law*, 2000 Wis. L. Rev. 723, 724 (2000).

159 Kleinfeld, *supra* note 158, at 36-44.

160 *Id.* at 47-48.

161 *Id.* at 44-46; See BRIAN Z. TAMANAHA, ON THE RULE OF LAW: HISTORY, POLITICS, THEORY 91-113 (2004) (comparing formalist and substantive theories on the rule of law).

162 See Botchway, *supra* note 148, at 196; Whitford, *supra* note 158, at 724 ("The Rule of Law ideal, therefore, has come to mean that government discretion must be bounded by standards that set effective limits on the exercise of that discretion.").

163 See Botchway, *supra* note 148, at 198.

164 MAX WEBER, ECONOMY AND SOCIETY: AN OUTLINE OF INTERPRETIVE SOCIOLOGY 31 (Guenther Roth & Claus Wittich, eds., Ephraim Fischhoff et al., trans. 1968).

165 *Id.* at 456-58.

166 See Botchway, *supra* note 148, at 170.

167 IEA, *supra* note 125, at 9.

168 TENENBAUM ET AL., *supra* note 60, at 66, 69.

mic or commercial decisions gravitate around price setting and identifying the paying entity.¹⁶⁹ The regulatory decision that is the center of attention is the feed-in-tariff, the price that a grid-connected IPP receives for the power that it sells to the national or regional utility, which is critical for the IPP's economic vitality. A technical decision is usually an engineering decision, such as the technical standards in the interconnection agreement that provide for safe and robust electrical connections between the national utility and a grid-connected IPP.¹⁷⁰ While technical in substance, these regulatory decisions have important economic impacts. For example, Thailand requires only a few standard relays for interconnection of small induction generators to the national grid, whereas regulators in other countries may require more extensive and expensive protection equipment.¹⁷¹ The cost of these technical decisions and the ability of the regulator to make effective choices may seriously affect the commercial viability of energy projects. Lastly, a process decision specifies the process by which the regulator's technical and economic decisions are made and enforced.¹⁷² Even if the regulator sets a price that ensures economic viability, the regulatory system and underlying transactions may still fail if the specified decision-making process involves too many steps, if government entities ignore their responsibilities, or if the regulator fails to enforce its decisions in a timely manner.¹⁷³ The concern over the regulatory process vis-à-vis Power Africa was evident during President Obama's speech at the Ubungo Symbion Power Plant in Dar es Salaam, Tanzania, where he noted a "sense of urgency" with respect to electrifying African with "more speed" by "cut[ting] through the red tape."¹⁷⁴

Lastly, *extractive capacity* focuses on the state's ability to finance its policies through revenue generation. Compared with other developing regions, sub-Saharan Africa's public financing capabilities are characterized by particularly weak tax revenue collection. Domestic revenue generation of approximately 23% of GDP trails averages for other developing countries and is the lowest for low-income countries at less than 15% of GDP a year.¹⁷⁵ Administrative corruption and tax evasion are among the most pressing problems for many African states,¹⁷⁶ with, in some cases, more than half of all taxes going uncollected.¹⁷⁷ Despite high growth rates in the last decade, domestically-raised revenue grew by less than 1.2% of GDP, suggesting that raising domestic revenue above current levels would require undertaking challenging institutional reforms to increase the effectiveness of revenue collection and broaden the tax base.¹⁷⁸ As a result, considerable power funding gaps exist in sub-Saharan Africa. The most severe cases are Ethiopia, a "Power Six" country, and the Democratic Republic of Congo, which have annual gaps of 23% of GDP (\$2.8 billion) and 18% (\$1.3 billion), respectively.¹⁷⁹ However, in the case of Power Africa, which is driven by private sector investment, the public financing gap is considerably less problematic.

Relative state capacity

In addition to determining the level of internal state insulation, political institutions also determine the extent to which certain social groups are able to influence policy. *Relative state capacity* differs from absolute state capacity primarily with respect to its unit of analysis. Relative state capacity comes from the state-socie-

169 *Id.* at 67.

170 *Id.* at 66.

171 *Id.* at 67.

172 *Id.*

173 *Id.* at 67-68.

174 THE WHITE HOUSE, *Remarks by President Obama at Ubungo Symbion Power Plant* (July 2, 2013, 10:58 A.M. EAT). Available in: <<http://www.whitehouse.gov/photos-and-video/video/2013/07/02/president-obama-speaks-ubungo-symbion-power-plant#transcript>>; Hinks Testimony, *supra* note 15.

175 EBERHARD ET AL., *supra* note 4, at 167.

176 See ROBERT KLITGAARD, *CONTROLLING CORRUPTION* 6 (1988).

177 See Richard M. Bird, *The Administrative Dimension of Tax Reform in Developing Countries*, in *LESSONS FROM TAX REFORM IN DEVELOPING COUNTRIES* 316 (Malcolm Gillis, ed. 1989).

178 EBERHARD ET AL., *supra* note 4, at 167.

179 *Id.* at 164-65.

ty relations literature.¹⁸⁰ Instead of focusing on the internal structure and autonomy of the state apparatus, relative state capacity focuses on the autonomy that the state apparatus has vis-à-vis particularistic societal interests. This paper defines relative state capacity as “the extent to which leaders are organizationally capable of insulating themselves from societal pressures by controlling channels of interest representation and autonomously defining national tasks.”¹⁸¹

One of the most significant characteristics of the energy crisis in sub-Saharan Africa is the significant disparity between urban and rural levels of electrification.¹⁸² While most tropical African economies are dependent upon the production and export of agricultural products, there is constant pressure to generate higher levels of income and higher standards of living. The natural solution is a shift from an agricultural-based economy to an industrial-based economy that focuses on labor- and capital-intensive goods and services. In addition to furthering this broad development goal, a regime seeks to remain in power to accumulate resources. These two assumptions are at the core of the urban bias problem in sub-Saharan Africa. First developed by Lipton, urban bias describes the pathological practice of government favoring the urban sector in development policy:

[t]he rural sector contains most of the poverty, and most of the low-cost sources of potential advance; but the urban sector contains most of the articulateness, organisation and power. So the urban classes have been able to “win” most of the rounds of the struggle with the countryside; but in so doing they have made the development process needlessly slow and unfair.¹⁸³

Urban areas represent the most exigent threat to a regime’s survival due to their geographical concentration and proximity to major government and communication centers, particularly the capital city. These threats manifest in the form of strikes, riots, and military coups. This is juxtaposed to rural areas, which face significant geographical distances and relatively higher collective action costs, and therefore are less likely to effectively organize against the state.¹⁸⁴ African states face pressure from two sets of actors: urban workers demanding low prices goods; and urban employers, who, when faced with higher prices, must pay higher wages to workers. The fundamental issue driving urban unrest concerns the real value of urban incomes and the erosion of purchasing power.¹⁸⁵ Accordingly, abating the militancy of urban consumers is a state priority. As a result, African states intervene in major economic markets, creating policies that benefit urban areas, but negatively affect rural areas, namely the agrarian sector. The agrarian sector is consequently squeezed in order to generate the necessary savings for urban-focused investment.¹⁸⁶ Rural-centric policy is thus paradoxically devised as a means to cope with urban issues. This urban bias extends into the power sector and operates as a core causal mechanism to understanding the obstacles facing the implementation of Power Africa.

Low levels of relative state capacity and the presence of urban bias significantly limit the success of Power Africa through the reification of the extant inequity of access to electricity in sub-Saharan Africa. Motivated by a desire to maintain their purchasing power, urban areas will pressure the government for po-

180 See generally JOEL S. MIGDAL, *STRONG SOCIETIES AND WEAK STATES: STATE-SOCIETY RELATIONS AND STATE CAPABILITIES IN THE THIRD WORLD* (1988); *CIVIL SOCIETY AND THE STATE IN AFRICA* (John Harbeson et al., eds. 1994).

181 Stephan Haggard & Chung-In Moon, *The South Korean State in the International Economy*, in *THE ANTIMONIES OF INTERDEPENDENCE* 141 (John Ruggie, ed. 1983).

182 See *supra* notes 9, 26-31.

183 Michael Lipton, *Why Poor People Stay Poor: Urban Bias in World Development* 13 (1977); see also Robert H. Bates, *Markets and States in Tropical Africa: The Political Basis of Agricultural Policies* 81-95 (1981) (discussing African states’ favoritism of urban over rural constituencies); see generally Robert Eastwood, Johann Kirsten, & Michael Lipton, *Premature Deagrualisation? Land Inequality and Rural Dependency in Limpopo Province, South Africa*, 42 *J. Dev. Stud.* 1325 (2006) (drawing on recent research). Urban bias overlaps with the notion of ruralism. See Debra Lyn Bassett, *Poverty and Global Ruralism*, 13 *J. Gender Race & Just.* 1, 11 (2009). The distinction is primarily that urban bias theory is aimed specifically at the allocation of resources, whereas ruralism encompasses resource allocation along with discrimination on a broader scale, including a social bias against rural dwellers. See Debra Lyn Bassett, *Ruralism*, 88 *Iowa L. Rev.* 273, 280 (2003).

184 See generally Mancur Olson, *The Logic of Collective Action and the Theory of Groups* (1965); Robert Bates, *Towards a Political Economy of Development: A Rational Choice Perspective* (1988).

185 Bates, *supra* note 184, at 346.

186 See generally Michael Todaro, *City Bias and Rural Neglect: The Dilemma of Urban Development* (1981).

licies that make electricity as inexpensive as possible, such as uniform national tariffs and high consumption subsidies. In order to deter civil unrest and ensure the survival of the regime, states with low relative state capacity will adopt these policies to placate their urban constituents. In light of the economic cost of these policies and relatively low levels of governmental revenue due to low extractive capacity, governments seek to cover the residual at the expense of rural areas. This bias will be increasingly institutionalized over time as the locus of decision-making authority will be centralized in order to be proximate to urban areas. As a result, rural electrification projects, such as distributed generation (DG), will lack the autonomy to tailor projects to local needs, negatively affecting their viability and long-term success. Furthermore, electrifying rural areas is inherently a more costly endeavor than electrifying urban areas; accordingly, establishing uniform tariffs, though beneficial for urban consumers, effectively marginalizes IPPs focused on rural electrification because they will be unable to sustain long-term profits. Since IPP commercial viability is at the crux of the success of Power Africa, failing to provide the proper economic incentives for IPPs due to a systematic political bias against rural electrification constitutes a significant implementation challenge.

Argument

This paper contends that low levels of state capacity, evidenced by a lack of bureaucratic insulation within the state apparatus and a lack of state autonomy from particularistic social actors, create institutional structures and regulatory frameworks that represent significant implementation obstacles to Power Africa. Specifically, weak and incapacitated state apparatuses and the presence of urban bias create implementation barriers through three main mechanisms: (1) creating hybrid power markets;¹⁸⁷ (2) centralizing power sector institutions; and (3) creating unfavorable regulatory frameworks. These mechanisms are systematically biased against the extension of electricity into rural areas, marginalize IPPs, and threaten the commercial sustainability of private sector investments.

Weak institutionalization within the state apparatus has produced neopatrimonial¹⁸⁸ states with highly politicized bureaucracies and centralized electrical power markets led by inefficient and insolvent parastatal organizations; these present significant risks to IPPs due to their lack of reliability as off-takers. Additionally, the centralization of the power sector deters IPPs and local governments from having political and fiscal autonomy to tailor power projects to local needs, significantly compromising DG projects. Furthermore, due to low state autonomy and urban bias, the hybrid power sector creates a regulatory framework that negatively affects both demand-side and supply-side aspects of rural electrification. The adoption of ineffective subsidy policies and high connection rates deter rural populations from being able to afford electrification. Additionally, suboptimal FITs and poorly structured or nonexistent PPAs threaten the commercial sustainability of IPPs in rural areas. The next three sections take up each of these mechanisms in turn, establishing a causal connection between state capacity and institutional and policy barriers to the implementation of Power Africa.

Institutional power and power institutions in sub-Saharan Africa

w(h)ither the State?

One of the most important political legacies of colonialism in Africa has been the reliance on the model of centralized bureaucratic administration, which, like the colonial systems before them, has not effectively

187 A centralized hybrid power market describes a power sector where incumbent state-owned utilities often retain dominant market positions with private sector actors involved on a temporary or highly marginalized basis. *See infra* notes 203-11.

188 Neopatrimonialism is a system of social organization where patrons utilize state resources in order to secure the support and loyalty of clients in the general population, expressed in terms of an informal patron-client relationship between multiple strata of society. *See infra* notes 189-94.

functioned. A considerable literature has assessed the poor institutionalization and lack of absolute state capacity in sub-Saharan Africa.¹⁸⁹ Additionally, in many sub-Saharan African countries, distinctions between the state realm and civil society are far from clear, evidence of low levels of relative state capacity.¹⁹⁰ One of the main problems is a loose coupling between the formal bureaucratic structure of these states and neopatrimonial forms of rule that suggest that personal relationships are more important than formal institutions in determining outcomes.¹⁹¹ In discussing the neopatrimonial state, Jackson and Rosberg note that “[b]lack Africa’s forty-odd states are among the weakest in the world. State institutions and organizations are less developed in the sub-Saharan region than almost anywhere else.”¹⁹² Accordingly, many of Africa’s elites lack the capacity to maintain the functions associated with national sovereignty in their territories, such as the maintenance of the rule of law, regulation of borders, and provision of social services.¹⁹³ Thus, some commentators have contended that African states lack the capacity to even be considered states in the empirical sense.¹⁹⁴ The prevalence of state incapacity in sub-Saharan Africa has had significant implications for the incompleteness of power sector reform in the region and the institutionalization of a public sector-controlled and politicized power sector, discussed in the following section.

White elephants on parade

Sub-Saharan Africa has gradually conformed to the global trends in power sector reform that began in the 1980s. By 2006, all but a few of the twenty-four countries of sub-Saharan Africa covered by the World Bank’s Africa Infrastructure Country Diagnostic had enacted a power sector reform law, three-quarters had introduced some form of private participation in power, two-thirds had corporatized their state-owned power utilities, two-thirds had established some kind of regulatory oversight body, and more than a third had IPPs in operation.¹⁹⁵ However, reform remains partial and incomplete; rarely in sub-Saharan Africa does one encounter the standard reform model, that is, unbundling, privatization, and wholesale and retail competition.¹⁹⁶ Although some reform steps have been taken, there have incredulously been few improvements to utilities.¹⁹⁷ Furthermore, the private sector has also had only limited involvement in reforms thus far.¹⁹⁸

The incompleteness of power sector reform has been characterized by low levels of administrative capacity of energy regulatory agencies. Independent electricity or energy regulatory agencies have also been established in most sub-Saharan African countries; however, they are now criticized for inconsistent decision-making and for exacerbating regulatory risk. Although these regulatory agencies are *de jure* independent in their decision-making, regulators are far from independent in a *de facto* sense. Regulators are often subject

189 See generally Patrick Chabal & Jean-Pascal Daloz, *Africa Works: Disorder as Political Instrument* (1999); Jean-François Bayart, *The State in Africa: Politics of the Belly* (1989).

190 See Ernest Harsch, *Accumulators and Democrats: Challenging State Corruption in Africa*, 31 *J. Modern Afr. Stud.* 31, 34 (1993).

191 See generally Robert H. Jackson & Carl Rosberg, *Personal Rule in Black Africa* (1982); Robert H. Jackson & Carl Rosberg, *Personal Rule: Theory and Practice in Africa*, 16 *Comp. Pol.*, no. 4, 1984; Chabal & Daloz, *supra* note 189.

192 Robert H. Jackson & Carl Rosberg, *Why Africa’s Weak States Persist: The Empirical and the Juridical in Statehood*, 35 *World Pol.* 1, 1 (1982).

193 See Udombana, *supra* note 157, at 1215 (2003).

194 See generally Jackson & Rosberg, *supra* note 192; Jeffrey Herbst & Greg Mills, *There is No Congo*, *Foreign Policy* (Mar. 18, 2009). Available in: <http://www.foreignpolicy.com/articles/2009/03/17/there_is_no_congo>.

195 Eberhard et al., *supra* note 10, at vi, 15; EBERHARD ET AL., *supra* note 4, at 80.

196 See Eberhard et al., *supra* note 10, at vi, 15; EBERHARD ET AL., *supra* note 4, at 180-81; J.E. Besant-Jones, *Reforming Power Markets in Developing Countries: What Have We Learned* 22 (Energy & Mining Sector Board Discussion Paper No. 19, 2006). Uganda is one of the exceptions where generation, transmission, and distribution were fully unbundled. In Kenya, generation (KenGen) has been separated from transmission and distribution (KPLC). Ghana has unbundled its transmission company and has a separate distribution company. Nigeria has technically unbundled its utility, although the separate entities still coordinate with each other. For historical reasons, local governments in Namibia and South Africa assume some responsibility for distribution.

197 See Eberhard et al., *supra* note 10, at 14-15. This is a confusing result because power sector reform is expected to improve performance.

198 See EBERHARD ET AL., *supra* note 4, at 79.

to pressure from governments to modify or overturn decisions.¹⁹⁹ Turnover among commissioners has been high, with many resigning under pressure before completing their full term.²⁰⁰ This is particularly problematic for Power Africa because regulators are responsible for establishing the technical, commercial, and procedural framework in which IPPs operate.²⁰¹ Accordingly, their political independence is cardinal to the commercial viability of power generation and rural electrification.²⁰² Low levels of absolute capacity among electricity regulatory agencies have produced a particular institutional structure that threatens the long-term commercial viability of IPPs and deters rural Africans from gaining access to electricity.

Instead of the standard market reform of the power sector, sub-Saharan Africa has seen the emergence of hybrid markets in which incumbent state-owned utilities often retain dominant market positions.²⁰³ Private sector cooperation is either temporary—for example, a limited-term management contract—or marginal, in the form of IPPs that contract with the state-owned national utility.²⁰⁴ These vertically-integrated parastatal²⁰⁵ electrical utilities have been observed as highly inefficient.²⁰⁶ Thus, like many of the region's state-owned enterprises (SOEs), the electrical utility is a “white elephant.” These centralized hybrid power markets have generally been characterized as having low technical capacity, evidenced by poor performance on both technical and commercial fronts. Average distribution losses in Africa are 23% compared with the commonly-used norm of 10% or less in developed countries.²⁰⁷ Moreover, average collection rates are only 88.4% compared with best practice of 100%.²⁰⁸ The inefficiency of the median utility is equivalent to 50% of turnover, which means that only two-thirds of revenue is captured.²⁰⁹ There are two main implications for the inefficiency of state-owned electrical utilities in hybrid markets. First, because utility managers are forced to forgo maintenance to cover operating deficits, future utility performance is constrained; countries with below-average efficiency have increased electrification rates by only 0.8% each year compared with 1.4% for utilities with above-average efficiency.²¹⁰ Second, inefficiency-caused operating deficits render many national utilities commercially insolvent.²¹¹

Despite low technical capacity and significant commercial performance, the hybrid power market persists along with an underperforming national electrical utility. The literature identifies two main reasons for the persistence of these white elephants. On an ideological front, Fabrikant traces the origin of public enterprises in developing countries to colonialism, pointing out that many former European colonial powers utilized corporations as an arm of their governments for seizing foreign territories.²¹² Upon independence, many developing nations opted for a strategy of economic development based on state ownership and control of much of the industrial sector, which they hoped would bring about structural changes in their economies.²¹³ Parastatal organizations have a long and storied history in African economics, beginning in the pre-independence colonial period, and crystallizing under various nationalization schemes of Afro-Marxist regimes. As an expression of socialist/Marxist ideology, public enterprises were a manifestation of national sovereignty and a means to establishing greater equity within society.

199 *Id.* at 95; Eberhard et al., *supra* note 10, at 47-48.

200 EBERHARD ET AL., *supra* note 4, at 95; Eberhard et al., *supra* note 10, at 47-48.

201 *See supra* notes 168-74.

202 *See* Haanyika, *supra* note 26, at 2980, 2989.

203 EBERHARD ET AL., *supra* note 4, at 79; Eberhard et al., *supra* note 10, at vi, 15; Anton Eberhard & Katharine Nawaal Gratwick, *IPPs in Sub-Saharan Africa*, 39 ENERGY POL'Y 5541, 5542 (2011).

204 Eberhard et al., *supra* note 10, at vi, 5.

205 A parastatal organization is defined as having some political authority and serving the state indirectly.

206 *See* EBERHARD ET AL., *supra* note 4, at 133; Gisela Prasad, *supra* note 31, at 249; John Turkson & Norbert Wohlgemuth, *Power Sector Reform and Distributed Generation in sub-Saharan Africa*, 29 ENERGY POL'Y 135, 137 (2001).

207 EBERHARD ET AL., *supra* note 4, at 134.

208 *Id.*

209 *Id.*

210 *Id.*

211 *See id.*; TENENBAUM ET AL., *supra* note 60, at 48, 169, 199.

212 Robert Fabrikant, *Developing Country State Enterprises: Performance and Control*, 15 COLUM. J. TRANSNAT'L L. 40, 40-56 (1976).

213 *See* BERTIL WALSTEDT, *STATE MANUFACTURING ENTERPRISES IN A MIXED ECONOMY: THE TURKISH CASE* 3-55 (1980).

The second reason, which is grounded in political economic logic, is consistent with the causal mechanism of state incapacity and the argument of this paper. SOEs were a means to establishing and crystallizing systems of clientelistic reciprocity through political patronage.²¹⁴ SOEs constitute a sizeable amount of national employment and managerial positions within public enterprises that are lucrative and highly desired; accordingly, these positions are a strong form of political capital. Thus, privatization may be resisted to retain the political capital employed by the state apparatus in order to maintain political power and regime stability. In its more nefarious incarnation, the endurance of SOEs operates as “the politics of nonreform” in order to perpetuate patrimonial politics, maintain systems of clientelistic reciprocity, and continue kleptocratic practices.²¹⁵ In the case of the hybrid power market and Power Africa, low levels of absolute state capacity—particularly regulatory and administrative capacities—cause the reform of the power sector to be functionally incomplete in order to retain important political capital. While independent regulatory institutions for the power sector may exist in a *de jure* sense, in practice, these institutions are highly politicized, technically incapacitated, and commercially unsuccessful. In a *de facto* sense, the state retains full control of the regulatory decisions that determine the profitability and logistics surrounding rural electrification. However, because these institutions lack political independence, they cease to operate in a technocratic and socially-ameliorative manner, and, instead, promulgate policies guided by a narrow, particularistic logic.

The hybrid power market presents several challenges to the implementation of Power Africa by threatening the long-term commercial sustainability of IPPs.²¹⁶ The first main challenge stems from the internal contradictions of the hybrid power market and a poor understanding of it. Following power sector reform and the creation of the hybrid power market, the responsibilities for planning and procurement of new power infrastructure were often moved to the ministry of energy or electricity.²¹⁷ Due to poor communication and technical disparities between state institutions, plans are often poorly executed, and generation expansion planning has collapsed.²¹⁸ Where still present, planning tends to take the form of outdated, rigid master plans that do not reflect the changes in price and availability of fuel and equipment and the resulting least-cost options.²¹⁹

Similarly, poor understanding of the hybrid power market prevents policymakers from devising clear and transparent criteria for allocating new building opportunities among the state utility and IPPs.²²⁰ For instance, when the government begins procurements, they may not conduct internationally competitive bidding; this is a problem because a rigorous bidding process provides credibility and transparency and results in more competitively priced power.²²¹ Tanzania epitomizes this problem.²²² It was expected that the Songo Songo project, a sixty MW gas-to-electricity plant project would be up and running within less than a year, despite the significant infrastructure development and financing required. In 1995, despite work on Songo Songo remaining outstanding, a second deal was struck by the Tanzanian government for 100 MW of diesel engines, known as Independent Power Tanzania Limited (IPTL), under a twenty-year PPA. At the time,

214 See generally Nicolas van de Walle, *Privatization in Developing Countries: A Review of the Issues*, 17 *World Dev.*, no. 5, 1989.

215 See Nicolas van de Walle, *The Politics of Nonreform in Cameroon*, in *HEMMED IN: RESPONSES TO AFRICA'S ECONOMIC DECLINE* 357-97 (Thomas M. Callaghy & John Ravenhill, eds. 1993); see generally Chabal & Daloz, *supra* note 189.

216 See EBERHARD ET AL., *supra* note 4, at 79 (noting that IPPs are introduced on the margin of the sector in in the hybrid power market).

217 *Id.* at 89.

218 *Id.*

219 *Id.*

220 Relatedly, “[w]hat has emerged as a general trend is that the mere presence of a regulator is not in and of itself a defining factor in attracting IPPs. An independent regulator may have positive, negative or no impact on outcomes. If, however, regulatory governance is transparent, fair and accountable, and if regulatory decisions are credible and predictable, there is greater potential for positive outcomes for host country and investor alike.” Eberhard & Gratwick, *supra* note 203, at 5543.

221 EBERHARD ET AL., *supra* note 4, at 91.

222 See Katharine Gratwick et al., *Generating Power and Controversy: Understanding Tanzania's Independent Power Projects* 22-31 (Mgmt. Program in Infrastructure Reform & Reg., Working Paper, 2007); EBERHARD ET AL., *supra* note 4, at 91; Gratwick & Eberhard, *supra* note 42, at 35-36.

Tanzania could absorb power from one plant, but certainly not two. Gratwick and Eberhard note the impetus for IPTL may be attributed to a host of factors, including alleged corruption.²²³ In the aftermath of the IPTL deal was a lengthy attempt at cancellation and renegotiation of this second plant, as well as temporary postponement of Songo Songo led by the World Bank.²²⁴ Accordingly, due to a lack of understanding of the hybrid power market, Tanzania had no IPPs in operation rather than two.

A second set of challenges associated with the hybrid power market focus on the off-take arrangement between the IPP and national utility. As previously noted, national utilities are characterized by low levels of technical capacity and significant inefficiencies that have rendered many commercially insolvent.²²⁵ This commercial insolvency poses considerable risks to IPPs that contract to sell their power to national utilities in order to secure a guaranteed revenue stream. Without this assured revenue, the commercial sustainability of IPPs is considerably threatened. As Paul Hinks noted,

[a]nother serious challenge to the success of power investments in Africa is the creditworthiness, or lack thereof, of the “off-takers” which are usually the government-owned utilities that purchase the electricity from the power producers and distribute it to the consumers. In most instances, the state-owned utility cannot demonstrate a sufficient level of assurance that it will be in a position to pay the private-sector producers or that it will pay promptly and in accordance with the terms of the contract. In practice, if the producers are not paid, they will in turn default on their payments to banks and other financial institutions that help fund the investments that have very little tolerance for non-payment.²²⁶

Hybrid markets require clarity on the IPP off-take arrangements incumbent national utilities that aggregate demand and average prices for customers. Surprisingly few African countries have explicitly defined their power market structures or procedures for negotiating and contracting PPAs with IPPs.²²⁷ Some countries have used the single-buyer model with the national utility as the buyer; however, it is unclear whether exclusivity is part of this monopsonistic relationship. Accordingly, both the inherent credit risk associated with the national utility of the off-taker and the lack of clarity with respect to the IPP’s potential customers have significant effects on the commercial sustainability of power projects in sub-Saharan Africa. The next section approaches the institutional design of power sectors in sub-Saharan Africa from a different perspective, focusing on the intergovernmental dynamics that arise due to low levels of independence both within the state apparatus and between state and society.

5. WHEN THE CENTER HOLDS: INTERGOVERNMENTAL RELATIONS OF THE POWER SECTOR

Due to low absolute and relative state capacity, the endurance of the centralized neopatrimonial state and the centralization of the power sector also have important implications for the implementation of Power Africa due to intergovernmental relations. Power Africa’s goal of extending access to electricity in sub-Saharan Africa, combined with the significant urban-rural disparity in access to electricity, suggests a critical role for subnational governments and DG in Power Africa. These intergovernmental relations can be understood as the sets of political, administrative, and fiscal relationships between the autonomous levels of government in a single country.²²⁸ Weingast, Montinola, and Qian contend that decentralized control over the economy by subnational governments within a common market prevents the central government from interfering with markets.²²⁹ Additionally, intergovernmental competition over mobile sources of re-

223 Gratwick & Eberhard, *supra* note 42, at 35.

224 *Id.* at 35-36; EBERHARD ET AL., *supra* note 4, at 91.

225 *See supra* note 211.

226 Hinks Testimony, *supra* note 15.

227 *See* EBERHARD ET AL., *supra* note 4, at 92.

228 *See* J. Tyler Dickovick, Decentralization and Recentralization in the Developing World: Comparative Studies from Africa and Latin America and Africa 3 (2011).

229 Gabriella Montinola et al., *Federalism, Chinese Style: The Political Basis for Economic Success in China*, 48 *World Pol.* 50, 58 (1995).

venue also constrains individual subnational governments.²³⁰ Relatedly, locating decision-making as close to the ground as possible enables a better understanding of the interplay of cultural, institutional, and political factors involved, and will lead to better decisions.²³¹ When there is a great deal of economic, environmental, or linguistic heterogeneity in the nature of tax bases or taxpayers, as there is in sub-Saharan Africa, decentralization will be more efficient because it allows an administration to be tailored to local conditions.²³² By comparison, advocates for a more centralized approach note that “[a] well-known problem with the decentralization of standard-setting power to local governments is that local authorities are often particularly vulnerable to lobbying by industrial interest groups as a consequence of the controlling role that such groups often play in the socio-economic interests of local communities.”²³³

In the context of Power Africa and the extension of access to electricity, the centralization of formal political institutions and the electrical power infrastructure has two main implications. First, centralization reinforces and further crystallizes the urban bias problem; with the locus of politics and economic policy continuing to be based in the national capital, rural populations will continue to face high collective actions costs and have little capacity to advance their interests. Accordingly, centralization represents the catalyst of a vicious cycle of urban bias and anti-rural policies, including, but not limited to, the power sector. Second, institutional centralization represents a significant deterrent to the development of DG projects in rural areas. Countries with dedicated rural electrification agencies (REAs) or rural electrification funds (REFs) have achieved higher rates of electrification than those that have not.²³⁴ For instance, the percentage of rural connection is twice as high in countries with both REAs and REFs than countries with neither institution.²³⁵

Several different mechanisms contribute to the importance of decentralization and higher levels of subnational political and fiscal autonomy to rural electrification. First, the likelihood of poor performance of DG projects is reduced when project planners select technologies that match the social characteristics of the community.²³⁶ Meeting end users’ needs, which vary both across and within communities, also affects the end users’ willingness to pay that has clear implications for the financial sustainability of the DG project.²³⁷ For instance, case study evidence suggests that relatively poor individuals and communities tend to prefer that programs install mini-grids or community-level programs, whereas wealthier individuals tend to implement single-family solar home systems.²³⁸ Decentralization is typically most effective and efficient at providing information on the local context and the needs, tastes, and preferences of the local end users;²³⁹ accordingly, a centralized power infrastructure fails to provide the specificity and context necessary to promote successful DG programs in rural areas.

This argument is more generally known as “market-preserving federalism.” See Barry R. Weingast, *The Economic Role of Political Institutions: Market-Preserving Federalism and Economic Development*, 11 J.L. Econ. & Org. 1, 3 (1995). But see generally Jonathan Rodden & Susan Rose-Ackerman, 83 Va. L. Rev. 1521 (1997) (critiquing market-preserving federalism).

230 Montinola et al., *supra* note 229, at 58.

231 Joseph Stiglitz, Senior Vice President & Chief Economist, The World Bank, Keynote Address at the World Bank Annual Conference on Development Economics: Whither Reform? Ten Years of the Transition (Apr. 28, 1999), <http://siteresources.worldbank.org/INTABCDEWASHINGTON1999/Resources/stiglitz.pdf>.

232 Paul Smoke, *Local Government Finance in Developing Countries: The Case of Kenya* 36 (1994).

233 Michael Faure et al., *Bucking the Kuznets Curve: Designing Effective Environmental Regulation in Developing Countries*, 51 Va. J. Int’l L. 95, 120 (2010); see also Rodden & Rose-Ackerman, *supra* note 229, at 1532-35.

234 Eberhard et al., *supra* note 10, at 49; Eberhard et al., *supra* note 4, at 105, 107-8.

235 Eberhard et al., *supra* note 4, at 108.

236 See Brass et al., *supra* note 64, at 120, 131; Eberhard et al., *supra* note 4, at 120 (emphasizing the importance of community involvement in extending access to electricity).

237 Brass et al., *supra* note 64, at 123.

238 See generally Claus, *supra* note 78; S. Komatsu et al., *Are Micro-benefits Negligible? The Implications of the Rapid Expansion of Solar Home Systems (SHS) in Rural Bangladesh for Sustainable Development*, 39 ENERGY POL’Y 4022 (2011).

239 See *supra* notes 230-32.

Secondly, the principle of collaborative governance²⁴⁰ and the ongoing involvement of end users are essential to the success of DG projects.²⁴¹ Empirical research on collaborative governance suggests that participation of end users improves service provision outcomes, such as risk reduction.²⁴² Ultimately, “[a] decentralized approach that mobilizes consultation with all stakeholders will ensure that needs and expectations are expressed and the most suitable energy solutions are explored.”²⁴³ In doing so, an enabling environment for the involvement of multiple stakeholders, including provincial governments and local communities, will be created that will facilitate the development of energy projects and the extension of electricity to rural areas. The next section takes up how IPPs and rural consumers are marginalized by these centralized power institutions through a systematically biased regulatory framework.

6. REGULATORS, MOUNT UP! POWER REGULATION AND RURAL MARGINALIZATION

A dearth of absolute capacity, evidenced by the politicization of the bureaucracy, and relative capacity, evidence by the presence of urban bias, also creates a regulatory framework that represents a significant implementation challenge of Power Africa. Earl Gast, USAID’s Assistant Administrator for Africa, noted that the pace of private sector investment has been hurt by an unfriendly regulatory environment.²⁴⁴ State elites, in order to harness political capital and ensure regime survival, create power regulations that concurrently affect the demand-side and supply-side elements of rural electrification. Under Power Africa, IPPs and end users constitute the supply and demand elements, respectively. Specifically, low state capacity constrains the supply of new power projects by not providing a tariff structure that is commercially sustainable and poorly structuring PPAs. On the demand side, regulations make access to electricity cost-prohibitive for many potential end users because of improperly structured subsidies and high, poorly-structured connection rates.

Supply-side issues

Feed-in-tariffs

The feed-in-tariff (FIT) typically receives most of the spotlight in the world of energy project development. A FIT is a tariff-support mechanism, typically for renewable energy generators or cogenerators, in which the generator is guaranteed a certain rate of payment for the wholesale power that it sells to the national utility, the national system operator, or other obligated purchaser of its power.²⁴⁵ In most instances, FITs for IPPs are set administratively rather than competitively as the outcome of a structured bidding process.²⁴⁶ In low-income countries, FITs have the largest effect on DG dissemination.²⁴⁷ Accordingly, absence of a FIT is cited as a barrier to distributed models of electrification.²⁴⁸

240 See Brass et al., *supra* note 64, at 127 (defining collaborative governance as “a collective decision-making process whereby public-sector agencies engage and deliberate with a variety of nonstate actors, including NGOs, private-sector firms, interest groups, community members, and individuals, to formulate, implement, manage, and regulate public policies, services, and programs”).

241 See *id.* at 120, 124-25, 127 (identifying the prominent themes of collaborative governance and end-user involvement in the DG literature); IEA, *supra* note 125, at 9, 102 (identifying end-user involvement as a precondition to successful rural electrification).

242 See, e.g., Eberhard & Gratwick, *supra* note 203, at 5455.

243 Mohiuddin, *supra* note 104, at 123.

244 See Karambu, *supra* note 16 (quoting USAID’s Assistant Administrator for Africa Earl Gast: “One of the obstacles we are facing is structuring a deal and attaining financial closure. It is difficult because it involves policy reforms that need implementing, or measures that have been agreed to by the government, but which are dragging.”).

245 See TENENBAUM ET AL., *supra* note 60, at 155, 179-80.

246 *Id.* at 179.

247 Brass et al., *supra* note 64, at 130.

248 See *id.* at 126; see generally A. Yadoo & H. Cruickshank, *The Value of Cooperatives in Rural Electrification*, 38 ENERGY POLY 2941

There are two main methods for setting FITs in developing countries: (1) *the avoided-cost method*, which values the FIT based on an estimation of costs that the utility or society will avoid by purchasing power generated from a renewable source; and (2) *the standardized, cost-reflective, technology-specific method*, which bases the FIT on the estimated cost of generation for each designated renewable energy technology, assuming that the developer has made a least-cost investment and will operate in an efficient manner.²⁴⁹ The regulatory regime's choice of FIT has immediate effects on the commercial sustainability of the IPP. If an avoided-cost approach is used, all eligible renewable energy generators receive the same FIT that does not vary based on the generation technology.²⁵⁰ Accordingly, not all generation technologies will be equally viable under the avoided-cost approach.

Thus, with a politicized bureaucratic structure with considerable pressures from urban elites, low levels of state capacity marginalize IPPs that focus on technologies that would primarily thrive in rural areas. In countries with tariffs set at the purchasing utility's avoided costs, it is usually the case that only a few projects will be commercially viable, usually larger-scale biomass cogeneration and particularly good small hydro-power sites.²⁵¹ Other important renewable energy technologies will not be commercially viable if the FIT is set at the utility's avoided costs. For example, wind power and solar power, which are generally prevalent in rural areas, will be nonviable because their costs will almost always be higher than the utility's avoided-cost-based FIT.²⁵² For instance, Tanzania utilizes an avoided-cost FIT.²⁵³ Based on 2012 tariff rates, estimated fifteen-year cost estimates conclude only hydropower and biomass from agricultural residues will be commercially sustainable, while wind and grown biomass—both resources plentiful in rural areas—will not be commercial sustainable.²⁵⁴

The principal responsibility of the regulator is to optimally set these tariffs—high enough that they will, after a transition period of several years, recover operating costs, capital depreciation, and debt payments, and provide for reserves to deal with emergency repairs and replacements—while concurrently protecting consumers from IPPs that try to exercise monopoly power after receiving a license or permit issued by the regulator.²⁵⁵ Three main tariff principles are frequently encountered in sub-Saharan Africa: (1) *uniform national tariffs*, where all citizens in the same tariff category pay the same tariff for electricity regardless of where they live; (2) *avoided-cost tariffs*, where an IPP operator is allowed to set tariffs that produce monthly bills to consumers that are equal to or below what the consumers would have been paying on other energy purchases that are now replaced by electricity; and (3) *cost-reflective tariffs*, tariffs that produce enough revenues to recover the overall capital and operating costs likely to be incurred by an actual or hypothetical IPP operator.²⁵⁶ If cost-reflective tariffs are not allowed because the IPP operator's tariffs are capped at a lower level—either by informal political pressures or formal legal requirements—there will be a financial gap that will render the IPP commercially unsustainable.²⁵⁷

However, due to a lack of absolute and relative state capacity, the implementation of cost-reflective tariffs is actively resisted in lieu of *de jure* or *de facto* uniform national tariffs. While many of the newer national electricity laws in sub-Saharan Africa require the regulator to set cost-reflective tariffs rather than a uniform national tariff, the current reality is that most retail tariffs are both uniform and too low.²⁵⁸ In the most complete survey performed to date on the financial condition of sub-Saharan African utilities, the Africa

(2010).

249 TENENBAUM ET AL., *supra* note 60, at 180-81.

250 *Id.* at 183.

251 *Id.*

252 *Id.*

253 *See id.* at 190.

254 *Id.* at 184.

255 *Id.* at 240.

256 *Id.*

257 *See id.* at 10, 240.

258 *See id.* at 242-43.

Infrastructure Country Diagnostic concluded that only ten of twenty-one national utilities in sub-Saharan Africa were allowed to charge tariffs that covered their operating costs, and only six of twenty-one national utilities could charge tariffs that covered operating and capital costs.²⁵⁹ The underlying mechanism for such policy inertia is urban bias personified:

[t]he reason countries often tolerate and, in some cases, actively resist movement to cost-reflective tariffs may be precisely because the status quo favors the relatively few, better off consumers who are actually connected to the grid. These consumers are mostly urban dwellers with the power to mobilize against governments and manipulate policies for their own benefit.²⁶⁰

One high-level African energy ministry official referred to immediate implementation of an overall cost-recovering tariff for the national utility as the equivalent of political suicide, especially when the general public thinks that the national utility is inefficiently run and filled with corrupt employees.²⁶¹ Consequently, uniform national tariffs are rarely allowed to rise to cost-reflective levels, even when legally required under the national energy law.

A uniform national tariff ignores the fact that the real cost of providing electricity in rural areas is almost always higher than providing the same electricity in urban areas due to higher capital cost and higher operating costs.²⁶² Accordingly, under a uniform national tariff, IPPs that serve rural communities experience a gap between their costs and revenues. In some cases, the cost-revenue gap arises because a law or regulation prohibits IPPs from charging tariffs that are high enough to cover their costs.²⁶³ In other cases, IPPs cannot charge cost-recovering tariffs because the national utility operating on the centralized track has created a nationwide *de facto* price ceiling by charging its customers below-cost retail tariffs, thereby making it seem to potential customers that the electricity provided by the IPP is too expensive.²⁶⁴ As a longtime Tanzanian mini-hydro specialist observed:

[i]t costs TANESCO [the Tanzania Electric Supply Company, the national utility] at least 500 shillings/kWh [about \$0.33] for operational cost alone, and add management and distribution costs, then power from TANESCO's isolated mini-grids costs something like 800 [about \$0.50] shillings. It is crazy that TANESCO turns around and sells it at 130 shillings [about \$0.08]. No investor can possibly build projects with this situation. And the problem is that everyone now expects electricity at 130 shillings. If someone gets permission to charge a higher price than this, some villagers will go to the power plant and break equipment saying, "you make too much money."²⁶⁵

Ultimately, the political economy that undergirds tariff regulation in sub-Saharan Africa presents a significant barrier to rural electrification and the implementation of Power Africa. As long as uniform national tariffs are maintained—either by formal legal or informal political mechanisms—IPPs serving rural areas will face significant additional costs that will threaten the commercial sustainability of their investments.

Power purchase agreements

A PPA is the contract that enables an IPP to connect with and sell electricity to a utility-owned grid.²⁶⁶ PPAs are critical to the commercial viability of a power project for several reasons. First, PPAs remove a considerable amount of risk and ensure a revenue flow for the IPP by contracting for purchasing electricity

259 Eberhard et al., *supra* note 10, at 29.

260 Eberhard & Shkaratan, *supra* note 2, at 13; *see also* TENENBAUM ET AL., *supra* note 60, at 243 (“The stated or unstated rationale for a uniform national tariff is that electricity is seen as a basic right to which all citizens are entitled. *For most elected officials, who have their eyes on the next election, fairness is much more important than cost recovery.*”).

261 TENENBAUM ET AL., *supra* note 60, at 244.

262 *See id.* at 243-44.

263 *Id.* at 11.

264 *Id.*

265 *Id.* at 244.

266 *See id.* at 6.

generated by the project. Projected revenues, in turn, comprise the single most important criterion that will render a power generation project bankable and ultimately capable of being on-sold to other investors.

Second, in many developing countries, including sub-Saharan Africa, the state-owned power utility is usually the IPP's only customer and main source of revenue. PPAs also set forth important terms of the transaction between the IPP and the government, including the tariff, the term, and how various risks, such as *force majeure*, are mitigated and allocated. Ultimately, the PPA is the foundation of a power project's bankability. As a first order issue, PPAs need to actually exist. Although many of the medium-to-large sized power projects in Africa have had a long-term PPA to ensure a market for the power produced and to secure revenue flows for debt and equity providers,²⁶⁷ not all countries use PPAs. PPAs require a level of technical and legal expertise in order to be successfully executed. In light of the relatively low levels of technical capacity in many African bureaucracies, the utilization of PPAs may be deterred for institutional reasons. However, technical assistance can be supplied by external actors. For instance, the Power Africa team at USAID has prided itself on helping the Government of Ethiopia and a project developer execute the first-ever PPA in the country's history.²⁶⁸

If PPAs do exist, issues of absolute capacity—particularly low administrative and technical capacities—can negatively affect the commercial viability of IPPs through the structure of the PPA. First, the absence of “deemed energy” clauses represents a substantial commercial threat to the commercial viability of IPPs, particularly to small power producers without capacity payments.²⁶⁹ Deemed energy refers to a situation in which a main-grid-connected IPP seller is able to produce electricity, but the buyer is unable to receive it. Accordingly, a deemed energy clause in the PPA obligates the buyer to provide compensation for electricity that the IPP was capable of producing but the buyer was unable to receive.²⁷⁰ The three most common reasons that prevent a utility from receiving an IPP's energy are (1) insufficient overall generation capacity; (2) insufficient capacity or damage to the local distribution network; and (3) weakness on the receiving utility's transmission grids.²⁷¹ Importantly, each of those reasons can be traced back to poor institutionalization of the power sector, including significant technical and commercial inefficiencies.²⁷² Additionally, because national utilities implement uniform national tariff rates that are too low to cover costs in order to secure political support from urban constituents,²⁷³ they are forced to forego maintenance in order to cover operating deficits.²⁷⁴ As inefficiencies persist and operation deficits increase over time, the frequency of the national utility being unable to receive energy and engaging in rolling blackouts should increase over time. Once a disturbance or lack of capacity in the national utility's system occurs, IPPs must shut down in the absence of a deemed energy clause, as they do not have a guaranteed revenue stream as long as the national utility is unable to receive energy.

Even if PPAs with deemed energy clauses are included in power transactions, there is still uncertainty about the reliability of the off-taker. It has already been noted that, unlike most utilities in developed countries and many developing countries, almost all state-owned utilities in sub-Saharan Africa are, at present, commercially insolvent due to systemic inefficiencies caused by a confluence of low technical capacity and the promulgation of suboptimal pricing mechanisms motivated by a lack of relative autonomy from societal

267 Gratwick & Eberhard, *supra* note 42, at 43.

268 Hinks Testimony, *supra* note 15; U.S. AGENCY FOR INT'L DEV., *What Power Africa Means for Ethiopia*. Available in: <<http://www.usaid.gov/powerafrica/partners/african-governments/ethiopia>>. (last visited July 25, 2014).

269 A capacity payment is a payment made to an IPP that ensures it can recover costs and earn a profit even if its power is not dispatched. *See, e.g.*, TENENBAUM ET AL., *supra* note 60, at 161.

270 *Id.* at 162.

271 *Id.* at 162-63.

272 *See supra* notes 206-11.

273 *See* TENENBAUM ET AL., *supra* note 60, at 244 (“The current reality for most national utilities in Sub-Saharan Africa is that tariffs are both uniform and too low.”).

274 *See supra* note 259.

interests.²⁷⁵ As the national utility often operates as a monopsony for IPPs, the prevailing insolvency raises significant issues with respect to the creditworthiness of the utility as the off-taker under the PPA. Key actors in Power Africa, including Symbion Power, the International Finance Corporation (the finance-arm of the World Bank), and USAID have all expressed concern with respect to the reliability and creditworthiness of the off-taker as a key challenge of Power Africa.²⁷⁶ In Tanzania in June 2012, several potential small power project developers complained to the national electricity regulator at a public meeting that the current PPA for grid-connected small power projects (SPPs) was not bankable on a project finance basis by the standards of non-Tanzanian financial institutions.²⁷⁷ Among the weaknesses that they pointed to in the current PPA were: (1) currency risk, since the payments would be in Tanzanian shillings, but debt payments would be in hard currencies such as dollars or euros; (2) a lack of indexing for the FIT price floor; and (3) no required payments if the buying utility was unable to receive energy from the SPP because of problems on the buyer's transmission grid.²⁷⁸ Ultimately, until IPPs are able to externalize their risk or African institutions establish a more bankable PPA, implementing Power Africa's goals will be challenging.

Demand-side issues

Subsidy structures

Even if a commercially sustainable and attractive investment climate and regulatory framework for IPPs is fostered by African governments, access to electricity must not be cost prohibitive for consumers if Power Africa is to be successfully implemented. Consumer or demand-side subsidies are one such mechanism in order to make electricity more affordable and therefore more accessible to those currently without access. In most African countries, tariffs for power are heavily subsidized. On average, power tariffs recover only 87% of full costs.²⁷⁹ Service subsidies amount to as much as \$3.6 billion per year, or .56% of Africa's GDP.²⁸⁰ These subsidies contribute to the precarious financial state of national utilities.²⁸¹ However, empirical evidence suggests that these subsidies largely bypass low-income households not even connected to services; accordingly, subsidies benefit the nonpoor. The share of subsidies going to the poor is less than half their share in the population, indicating a very pro-rich distribution.²⁸² Accordingly, while the usual justification for subsidies is to make services affordable to low-income households, power subsidies are ironically and perversely structured to exclude low-income households from accessing electricity.

At the heart of this perverse logic is the politicization of subsidies through the causal mechanism of urban bias. The social and economic groups that are bypassed by subsidies—low-income households and those not connected to power services—map neatly onto rural populations. Additionally, heavy subsidies to urban consumption of electricity resonate strongly with urban bias theory. Because urban consumers place a significantly high value on their purchasing power, they are likely to pressure the government to provide heavy subsidies to power services in order to retain relatively strong purchasing power.²⁸³ Due to limited revenue²⁸⁴ and the generally high macroeconomic cost of subsidies,²⁸⁵ it is unlikely that extending these

275 See *supra* notes 206-11.

276 See *supra* note 15.

277 TENENBAUM ET AL., *supra* note 60, at 159.

278 *Id.*

279 EBERHARD ET AL., *supra* note 4, at 115.

280 *Id.*

281 See *supra* note 211.

282 See EBERHARD ET AL., *supra* note 4, at 117 (providing statistics of the distributional incidence of subsidies received by the poor).

283 See *supra* note 185.

284 See *supra* notes 175-79.

285 See EBERHARD ET AL., *supra* note 4, at 118.

subsidies is economically viable. Accordingly, following the script of urban bias, rural areas are squeezed in order to benefit the more politically-active urban sector that are greater threats to the survival of the regime.

A natural solution to overcome this disparity is to implement cross-subsidies, tariff structures where some customers pay more for their costs of supply and other customers pay less than their costs of supply.²⁸⁶ Effectively, one group of consumers subsidizes another group by paying different amounts. In the developing world, the three most common forms of cross-subsidies are divided along industrial/residential, high-usage/low-usage, and urban/rural lines.²⁸⁷ Despite the widespread approval of cross-subsidies as a policy instrument to further pro-poor, pro-rural electrification,²⁸⁸ state executives typically support uniform national tariffs, which, by definition, preclude cross-subsidization.²⁸⁹ Cross-subsidies are generally discouraged in policy statements and often statutorily prohibited.²⁹⁰ For example, Tanzania's 2008 Electricity Law states that "no customer class should pay more than a licensee than is justified by the costs that it imposes on such a licensee."²⁹¹ Although the adoption of cross-subsidies would be beneficial for rural electrification goals, it would come with significant political consequences. Urban consumers' *de facto* subsidization of rural consumers constitutes an erosion of urban purchasing power, which would not only be politically unpopular, but also illegal in some countries. Implementing cross-subsidies could open African governments to removal via election or other modes of unrest such as protests, strikes, or riots. Accordingly, low state capacity and the presence of urban bias present a significant deterrent to the legal adoption of cross-subsidies that would contribute to the goals of Power Africa.

Connection charges

Even if a government has created an investment and regulatory climate that allows for IPPs to be commercially sustainable and even has a subsidy structure in place that extends into low-income, rural areas, the lights may still not turn on. Connection charges, "the fee[s] charged to a customer to connect to an established distribution network",²⁹² remain the single biggest impediment to expanding electrification in sub-Saharan Africa.²⁹³ Simply put, "to the unconnected, cheap power is as inaccessible as costly power."²⁹⁴ Connection rates are less than 30% in Africa, compared to 65% in South Asia and 85% in Asia and the Middle East.²⁹⁵ Furthermore, many of those who remain without a connection live reasonably close to existing networks.²⁹⁶ Even when distribution lines are provided to increase access, the percentage of consumers who are able to connect to the network remains extremely low.²⁹⁷ The initial rates of connections in villages newly added to the electrical grid are as low as 10-20% of possible connections, and that number only increases only very slowly over time.²⁹⁸

Both the magnitude and structure of the connection charges are identified as characteristics that deter consumer access to electricity. In sub-Saharan Africa, connection charge prices incredulously often exceed

286 See TENENBAUM ET AL., *supra* note 60, at 137.

287 *Id.*

288 See Tully, *supra* note 88, at 33; TENENBAUM ET AL., *supra* note 60, at 11, 49, 139-41, 258; EBERHARD ET AL., *supra* note 4, at 103.

289 See TENENBAUM ET AL., *supra* note 60, at 139; *supra* notes 256-65.

290 See TENENBAUM ET AL., *supra* note 60, at 137. *But see id.* at 137-48 (noting that statements and laws are sometimes ignored in practice).

291 Electricity Act of 2008, § 23(2)(f) (2008) (Tanz). *But see id.* § 23(2)(b) (noting that "tariffs should allow licensees to recover a fair return on their investment").

292 Golumbeanu & Barnes, *supra* note 27, at 3.

293 TENENBAUM ET AL., *supra* note 60, at 122; *see also* IEA, *supra* note 125, at 9, 101; Eberhard & Shkaratan, *supra* note 2, at 14.

294 Eberhard et al., *supra* note 10, at ix; *see also* IEA, *supra* note 125, at 101.

295 EBERHARD ET AL., *supra* note 4, at 104.

296 *Id.*

297 Golumbeanu & Barnes, *supra* note 27, at 2.

298 *Id.*

a country's annual per capita income.²⁹⁹ Sub-Saharan Africa also has the highest number of connection charges in excess of \$100 per customer of any region in the world.³⁰⁰ For instance, in Tanzania, TANESCO, the national utility, sets connection charges to new customers based on distance from existing distribution lines: \$297 (thirty meters), \$871 (thirty-one to seventy-one meters), and \$1,288 (greater than seventy-one meters).³⁰¹ With a per capita gross national income of \$1,560,³⁰² this alone represents a significant constraint on access to electricity. Additionally, connection charges are typically structured as one-time, upfront fees.³⁰³ Given the magnitude of the charges, they can constitute a powerful disincentive to people who wish to obtain electricity, no matter how much they desire the service.

Several straightforward and feasible policy instruments have been suggested in order to make connection charges more manageable, such as capital subsidies or amortization schemes where the connection cost is rolled into the tariff or a long-term credit plan.³⁰⁴ However, few of these policies have been implemented in sub-Saharan Africa.³⁰⁵ This policy inertia is grounded in a political economic logic motivated by the incapacity of the state apparatus. Recall that this paper argues tariffs are set suboptimally low in sub-Saharan Africa in order to placate urban populations by effectively propping up their purchasing power through low electricity prices.³⁰⁶ Due to higher capital costs, higher operational costs, and lower economies of scale, providing power to rural areas is more costly than supplying it in urban areas. Accordingly, utilities may fall far short of recovering the expected operating costs in rural areas, particularly if connection charges are high and load factors are relatively low.³⁰⁷ If a utility doubts the government will make up the revenue shortfall, it will have an economic incentive to resist expanding service into rural areas.³⁰⁸ Accordingly, the high connection charge is an indirect way of discouraging new users from signing up, conceptualized as a form of “passive resistance” among state-owned utilities.³⁰⁹ Explaining the failure of an electrification program in an African country, a donor memo lamented:

[name of utility] did not make an effort to roll out connections to poor households under this scheme as it had no incentives to connect them, since the actual connection costs were three times higher, and clearly these costs would not be recouped through the lower tariff revenue earned by serving low-income household.³¹⁰

Thus, connection costs epitomize the negative synergistic effect of low state capacity on demand-side barriers to rural electrification and the implementation of Power Africa. Pressures from both urban populations and the politicized institutions of the state create a regulatory framework characterized by suboptimal tariffs and subsidies that places considerable revenue strain and insolvency on national utilities. As a result of these structural factors, improper incentives exist for national utilities to extend access to electricity into rural areas. However, “getting prices right” would entail the imposition of additional costs on urban populations that come with potentially dire political consequences. Accordingly, connection costs remain high and constitute a significant barrier to the approach and goals of Power Africa.

299 *Id.* at 6.

300 *Id.*

301 *Id.* at 7.

302 THE WORLD BANK, GNI per capita PPP (current international \$), <http://data.worldbank.org/indicator/NY.GNPPCAP.PP.CD> (last visited July 25, 2014).

303 Golumbeanu & Barnes, *supra* note 27, at 2, 4-5.

304 Cook, *supra* note 56, at 311; Golumbeanu & Barnes, *supra* note 27, at 7, 17, 19; TENENBAUM ET AL., *supra* note 60, at 129.

305 But see, e.g., TENENBAUM ET AL., *supra* note 60, at 131, 136 (discussing Mali's subsidy policy and Ethiopia's connection-fee-financing program).

306 See *supra* note 185.

307 Golumbeanu & Barnes, *supra* note 27, at 2.

308 *Id.*; TENENBAUM ET AL., *supra* note 60, at 22, 126-27.

309 TENENBAUM ET AL., *supra* note 60, at 127.

310 *Id.* at 128.

7. CONCLUSION: UNCHAINING SHANGO

Power Africa represents an auspicious and innovative initiative to address sub-Saharan Africa's extant power crisis that had significant implications for social, economic, and environmental development as well as the fulfillment of an implicit attribute of a number of human rights. Characterized by a focus on private sector investment and collaboration between United States governmental agencies, private sector investors and developers, and African governments, Power Africa truly is a new paradigm that has learned from the historical lack of success of traditional, top-down aid paradigms and structural adjustment programs. However, Power Africa faces a number of challenges in order to successfully achieve its goals by creating an attractive and favorable investment climate for long-term private sector investment and commercial sustainability, and providing the proper incentives for those currently lacking access to electricity—typically low-income, rural Africans—to be able to be involved with DG projects and afford access to the central grid. Thus far, the literature has devoted little attention to the challenges facing Power Africa, and the legal literature in particular has not addressed power sector reform in sub-Saharan Africa.

Although the pervasive economic discourse of “getting prices right” and establishing a strong legal and regulatory framework are essential to the success of Power Africa, this paper has argued that there is an underlying political economic logic that causally explains two distinct yet related challenges of implementing Power Africa. Specifically, the lack of state capacity—evidenced by the politicization of the state bureaucracy and the presence of urban bias—have created institutional structures and a regulatory framework that threaten both the commercial sustainability of private sector power investment and the affordability of access to electricity by new users. State incapacity has produced an incompletely reformed hybrid power sector that is dominated by a vertically-integrated state monopoly and characterized by a centralized structure, insolvent national utilities, and politicized regulators. Lacking autonomy from urban populations, the African states have constructed a regulatory framework that constrains both the supply and demand elements of power access. IPPs are constrained by (1) suboptimal uniform tariff structures that render development of power projects in rural areas commercially unsustainable; (2) PPAs that lack needed clauses that ensure a revenue stream for producers while the national utility cannot receive power; and (3) the general creditworthiness and reliability of the off-taker. Potential new users of electricity are constrained by subsidy structures that bypass low-income, rural households in favor of urban households and expensive, poorly-structured connection charges to the grid.

The implications for future research stemming from this paper are considerable. At the time of this paper, Power Africa is nearing its second anniversary. Evaluating this paper's argument against actual evidence of Power Africa programs is the clearest step forward in this research program. Additionally, extending the theoretical framework of this paper to other developing power markets, such as Latin America and Southeast Asia that have an increased interest in renewable energy, would provide empirical robustness and a strong comparative element to the analysis. Lastly, given the significant differences in the investment model³¹¹ and the increasing financial activity of Chinese investment in the developing world, a broader comparative analysis of Power Africa should be undertaken against China's model of foreign assistance and international investment.

As Power Africa moves forward, United States governmental agencies, in addition to supplying African governments with technical assistance and credit enhancement and risk mitigation instruments to investors, must understand the effect that institutional structures and dynamics have on the public-private partnership power transactions that are at the core of Power Africa. Accordingly, this paper suggests a number of institutional and regulatory reforms to complement Power Africa's existing technical assistance. On the institutional front, it is clear that establishing stronger bureaucratic independence from politicized and parti-

311 See, e.g., Deborah Brautigam, *The Dragon's Gift: The Real Story of China in Africa* (2009).

cularistic elements of the state apparatus and the state's independence from urban populations are essential for strengthening both absolute and relative state capacities. First, the erosion of urban bias results from the creation of institutional mechanisms that establish stronger links of accountability between state and rural populations. Simply put, a rationally-acting regime would quickly rethink policies systematically biased against rural areas if these populations constituted a threat to the survival of the regime. The establishment and further strengthening of robust democratic institutions, particularly electoral mechanisms, exemplifies a means to overcome urban bias.³¹² Indeed, the literature emphasizes that democracies³¹³ with better functioning institutions³¹⁴ provide higher levels of public goods.

Decentralization and devolution are also recommended in order to help overcome suboptimal policies caused by state incapacity and urban bias. Given that rural electrification is a primary goal of Power Africa, there is a critical role for subnational governments and DG in Power Africa. Providing more authority and autonomy for subnational governments first and foremost removes the political pressures of urban constituents, a core component of urban bias, from the policy equation. Second, because there is a great deal of economic, environmental, and linguistic heterogeneity in sub-Saharan Africa, decentralization will be more efficient than central control because it allows administration to be tailored to local conditions.³¹⁵ Lastly, DG projects will likely be more successful in the long-run under a decentralized approach because projects will better meet the needs of end users and involve them in the development of the project. Creating and empowering rural electrification agencies and rural electrification funds to oversee rural electrification should complement more macro-institutional reforms.

Additionally, African governments must be encouraged to rethink their current regulatory framework. In order for an extension of access to electricity to become a reality, both the supply-side needs and demand-side needs of electricity must be met. At its core, these two needs focus on making rural electrification commercially sustainable for IPPs and making access to power affordable for consumers. On the supply-side, uniform national tariffs should be replaced with cost-reflective tariffs in order to allow IPPs to charge higher prices to reflect the higher operating costs of providing power to rural areas. More generally, despite the lack of political unpopularity, allowing national utilities to raise prices in order to cover operating costs will address the serious issues of commercial insolvency that plague African power utilities and reduce their credibility as off-takers. Additionally, African governments should continue to be encouraged to utilize and develop PPAs with deemed energy clauses in order to assure IPPs of a revenue stream and limit the political risk associated with their development of energy and power projects.

On the demand-side, African governments must eschew extant subsidy structures that perversely support existing consumers of electricity, often residing in urban areas. Instead, African governments should legalize cross-subsidies of electricity and allow urban consumers to pay relatively higher prices in order for more rural consumers to afford electricity. Lastly, connection charges should be structured in a manner that both allow electricity providers to recoup their costs and potential consumers to afford connecting to the grid. For instance, capital subsidies could be provided by African governments or the development community in order to offset the high costs of connection. Additionally, restructuring connection charges from a one-time, lump sum payment upfront to an amortization scheme where the connection cost is rolled into the tariff or a long-term credit plan would allow for consumers to access the grid (netting the utility an additional customer) while repaying the connection charge in full over time. Ultimately, a broader and deeper understanding of African institutions and political economy can help light the way for powering development under the Power Africa Initiative. Without recognition of the underlying institutional dynamics that structure the African power sector, Shango will continue to be enchained and Power Africa will face an uphill battle.

312 See generally BATES, *supra* note 183.

313 See *supra* notes 141-43.

314 See, e.g., *supra* note 144.

315 See *supra* notes 230-32.

Para publicar na revista Brasileira de Políticas Públicas, acesse o endereço eletrônico www.rbpp.uniceub.br
Observe as normas de publicação, para facilitar e agilizar o trabalho de edição.