

The Case for Transparency in Power Project Contracts: A Proposal for the Creation of Global Disclosure Standards and PPA Watch

Mohamed Rali Badissy, Charles Kenny, and Todd Moss

Abstract

The purpose of a nation's power sector is to deliver reliable electricity at the lowest cost and for the greatest benefit. At the heart of any private electricity generation project is a Power Purchase Agreement (PPA), a contract that contains key provisions such as price, payment stipulations, and obligations by the offtaker utility and/or host-government. Despite their significant effects on service quality and public finances, these contracts are often negotiated and signed in secret, with even the most basic terms shielded from the citizenry. This opacity has created risks and, in a growing number of cases, contributed to costly and damaging outcomes, such as overpayment, overcapacity, large debts, and grid instability. Drawing on examples from enhanced transparency in public budgets, sovereign debt, and extractive industries, we propose that governments agree to publish PPAs with any public sector obligation and that funders of private generation projects also agree to minimum disclosure standards. The objective is to create incentives for better practice, improve governance of the power sector, reduce transaction costs, and ultimately, to deliver cheaper and more reliable power for people and businesses. Transparency of PPAs would support the efforts of government policymakers and planners, investors, and development finance institutions to accelerate energy market development and to reap the benefits of open competition. Greater disclosure would also provide crucial information for citizens to hold their own governments accountable for the contracts they sign on behalf of the public.

Center for Global
Development
2055 L Street NW
Fifth Floor
Washington DC 20036
202-416-4000
www.cgdev.org

This work is made available
under the terms of the Creative
Commons Attribution-
NonCommercial 4.0 license.

CGD Policy Paper 227
September 2021

**The Case for Transparency in Power Project Contracts: A Proposal
for the Creation of Global Disclosure Standards and PPA Watch**

Mohamed Rali Badissy
Penn State Dickinson Law, and Energy for Growth Hub

Charles Kenny
Center for Global Development, and
Energy for Growth Hub (advisory board member)

Todd Moss
Energy for Growth Hub, and Center for Global Development

We are grateful to Mariel Ferragamo for assistance in editing and to the many people who provided feedback on earlier drafts of this paper including Rob Mosbacher, Rose Mutiso, Murefu Barasa, Andy Herscowitz, Sally Mtambo, Ben Attia, Andrew Alli, Priscilla Atansah, Mimi Alemayehou, Wikus Kruger, Katie Auth, and multiple anonymous reviewers. Any errors in fact or judgement are solely those of the authors.

Mohamed Rali Badissy, Charles Kenny, and Todd Moss. 2021. "The Case for Transparency in Power Project Contracts: A Proposal for the Creation of Global Disclosure Standards and PPA Watch." CGD Policy Paper 227. Washington, DC: Center for Global Development. <https://www.cgdev.org/publication/case-transparency-power-project-contracts-proposal-creation-global-disclosure-standards>

Center for Global Development
2055 L Street NW
Washington, DC 20036

202.416.4000
(f) 202.416.4050

www.cgdev.org

The Center for Global Development works to reduce global poverty and improve lives through innovative economic research that drives better policy and practice by the world's top decision makers. Use and dissemination of this Policy Paper is encouraged; however, reproduced copies may not be used for commercial purposes. Further usage is permitted under the terms of the Creative Commons License.

The views expressed in CGD Policy Papers are those of the authors and should not be attributed to the board of directors, funders of the Center for Global Development, or the authors' respective organizations.

Contents

1. Introduction.....	1
2. The problem	2
3. How transparency can help	4
4. For which projects should information about IPPs/PPAs be disclosed?	6
5. What specific information should be disclosed?	9
6. PPA transparency in the global open ecosystem.....	13
7. Conclusion: An independent <i>PPA Watch</i> could help to raise awareness and generate momentum	14
Annex A. Likely objections to PPA transparency with informed responses.....	16
Annex B. Proposed basic PPA disclosure.....	17
Annex C. Proposed secondary data phases for disclosure.....	19

1. Introduction

Improved energy infrastructure is a necessary – and expensive – prerequisite to development. The International Energy Agency (IEA) predicts a 4.6 percent compound annual growth rate of demand for electricity in Sub-Saharan Africa between now and 2030, suggesting the need to quickly double capacity¹ and catalyze tens of billions in new investment.

Attracting private capital to the sector and increasing the number of independent power projects (IPPs) is a central part of the strategy to meet the demands for power and investment capital.² The World Bank's Private Participation in Infrastructure database³ reports nearly \$1 trillion in investment in electricity projects with private participation since 1990, while IPPs accounted for about 24 percent of installed power generation between 1990-2013 in Sub-Saharan Africa (excluding South Africa).

Any successful IPP requires a power purchase agreement (PPA), a long-term contract between the power generator and the power customer. Typically, the customer is an electric utility – in many countries, publicly-owned utility – often backed by an explicit or implicit financial guarantee from the government to fulfill the PPA's financial terms. As the primary source of revenue for any IPP, PPAs are a fundamental necessity to attract project financing and enable the project to proceed. However, despite their ubiquitous nature, PPAs are not all the same and, in many places, the contractual details (or even the existence of the PPA) are not publicly disclosed by project developers, financiers, utilities, or the host government.

This paper makes the case for greater transparency in IPP contracting – and specifically for publishing PPAs or at least establishing minimum disclosure standards for PPAs – as a tool to improve outcomes from power projects. Furthermore, it points to evidence that transparency is both feasible and likely to be effective in raising the bar for consumers, governments, investors, and donors. This proposal also provides a template for the type of information that should be released and situates a possible *PPA Watch* initiative within the broader global transparency and open government ecosystem.

¹ <https://www.worldbank.org/en/topic/energy/publication/independent-power-projects-in-sub-saharan-africa>

² Note IPP normally refers to 'producer' not 'project.'

³ *Private Participation in Infrastructure Database*. World Bank. (2019). Retrieved 12 August 2021, from <https://ppi.worldbank.org/en/ppidata>.

2. The problem

While IPPs are an important vehicle for private investment in vital energy infrastructure, they are also costly, complex, and long-term projects with multiple linkages to sovereign balance sheets and the wider economy. Examples of problematic IPPs (and/or the accumulated effects of multiple IPPs) can involve:

- *Overpaying.* Poorly-negotiated PPAs can lock in high costs for generated electricity compared to national or global comparators.
- *Overcapacity.* Transmission and distribution companies are often obligated to pay for the full capacity of a power project, even if they do not use or need the power, which can result in costly oversupply.
- *Debt risk.* When utilities are unable to maintain their payment obligations under PPAs and require government payments or bailouts, this can be a significant drain on public resources.
- *Systemic imbalances.* Obligations under individual PPAs can combine to create challenges for utilities to match power production profiles with demand trends. In the absence of ways to manage imbalances, blackouts or huge inefficiencies can occur, such as excess capacity during low demand periods (e.g., where hydropower is a major part of the power mix, mid-day in the rainy season) and insufficient capacity during high demand (e.g., evening in the dry season).
- *Governance risk.* Corruption and/or the suspicion of corruption from opaque deals negotiated behind closed doors can affect public confidence, especially those involving significant financial commitments from governments.
- *Dispute risk.* Demand shocks from the pandemic and recession have led to a surge in force majeure declarations, raising questions about contract details and obligations.
- *Investment risk.* Contract cancellations, forced renegotiations, effective expropriations, and other legal conflicts place a significant burden on firms and raise the risk premium of investing in the very markets that need capital the most. This harms both investors (by reducing potential opportunities) and host governments (by raising the risk-adjusted cost of capital).

Recent examples of these problems in practice are, unfortunately, common.

- Ghana signed at least 46 PPAs during the 2011–16 period. The current government (who came to power only in December 2016) is now paying an estimated \$450 m per year⁴ for power and gas that it does not need or use under contracts that remain undisclosed. The government cancelled eleven PPAs⁵ signed by the previous

⁴ <https://www.bloomberg.com/news/articles/2019-11-08/how-having-too-much-energy-creates-a-debt-problem-for-ghana>.

⁵ <https://www.ghanaweb.com/GhanaHomePage/business/Gov-t-terminates-11-Power-Purchasing-Agreements-signed-under-Mahama-686747>.

administration and seeks to renegotiate many others, embroiling all parties in costly and protracted legal disputes.⁶

- Tanzania’s experience with IPPs up to 2016 involved four projects, all of which were renegotiated and involved equity turnover. The country’s ITPL oil/gas power project led to power which cost six times that produced by the country’s gas IPP, as well as 20 years of court cases. In 2018, the government-owned utility Tanesco was forced to pay \$150 m to Standard Chartered Bank in connection with the deal.
- Kenya is experiencing major grid instability and imbalances, in part because PPA obligations necessitate dispatch of variable wind power over more stable geothermal. A whistleblower also recently leaked a PPA⁷ for a controversial coal power project in Kenya. In June 2020, Kenya reportedly planned to invoke force majeure⁸ on at least ten power producers in response to a sharp decline in demand.
- Nigeria signed 14 solar PPAs⁹ at a price of \$0.11/kWh, but a prolonged implementing process led to the government demanding renegotiation.
- Across the world, governments – such as Panama, Honduras, and Vietnam – find themselves hamstrung by poorly negotiated PPAs that weigh on utility/state finances and displace potential new investments at a time of historically low electricity prices.

These problems have significant development and financial effects. Moreover, problem projects and rising risks threaten future project investment because potential investors and/or governments lack confidence in their ability to sign fair contracts that generate returns over the long term while providing affordable, efficient power to consumers.

The challenge is particularly urgent as dynamic technological innovation (especially for renewables) quickly changes what is considered a ‘good deal.’ Renewable power project costs are falling rapidly, making it especially important that decision-makers in small, lower-income countries have the information needed to judge contract value for money – and that civil society has the information to hold public officials accountable for delivering that value to consumers.

⁶ For further detail, see Ishmael Ackah, Katie Auth, John Kwakye, Todd Moss, “A Case Study of Ghana’s Power Purchase Agreements,” Institute of Economic Affairs, Accra and Energy for Growth Hub, Washington DC, March 2021.

⁷ <http://www.decolonize.org/wp-content/uploads/2018/07/170804.-Amu-Power-KPLC-Power-Purchase-Agreement-lamu-coal.pdf>.

⁸ <https://www.businessdailyafrica.com/news/Ministry-moves-to-declare-wholesale-power-deals-null/539546-5581734-ifpgvuz/index.html>.

⁹ <https://www.energyforgrowth.org/memo/how-to-resolve-the-tariff-disputes-blocking-nigerias-solar-project-pipeline/>.

3. How transparency can help

Governments and firms worldwide are recognizing the benefits of procurement and contracting transparency, particularly involving contracts that are large and long-term with significant public obligations. These transparency initiatives have realized benefits in a variety of areas:

- *Sovereign debt disclosure.* The IMF and World Bank¹⁰ insist that borrowing clients publicly report all accumulated debts. Accurate and comprehensive debt data are considered a cornerstone to sound borrowing and lending practices. (Notably, this does not yet apply to contingent liabilities like PPAs despite the fact they may create substantial public obligations.)
- *Procurement transparency.* Countries including Brazil, Slovakia, Georgia,¹¹ Chile, Colombia, and the United Kingdom proactively publish government contracts and a considerable amount of ancillary information. There is growing evidence¹² linking this routine publication with improved competition and prices. (Because of state support or state ownership of utilities, PPAs are very often a form of public procurement.)
- *Oil and mining contracts.* The Extractive Industries Transparency Initiative is moving towards a model of mandating members to publish entire, unredacted contracts¹³ between governments and industry covering all oil, gas, and mining contracts – a decision that affects 53 implementing countries worldwide.

More transparent PPAs might similarly help produce more favorable outcomes in the power sector. Governments and utilities are often criticized for failing to deliver power at a reasonable price due to the inability of customers, both residential and commercial, to rationalize the price they pay with input costs. Transparency around PPA terms and pricing provides decision-makers, such as energy ministry officials or utility regulators, with objective data to defend their decisions to the public and explain the value produced by well-negotiated power contracts.¹⁴

¹⁰ World Bank Group; International Monetary Fund. 2018. *Strengthening public debt transparency: the role of the IMF and the World Bank – G20 note (English)*. Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/991171532695036951/Strengthening-public-debt-transparency-the-role-of-the-IMF-and-the-World-Bank-G20-note>.

¹¹ Kenny, C. (2014). *Four Leaders in Government Contract Publication*. CGDev. Retrieved 12 August 2021, from <https://www.cgdev.org/blog/four-leaders-government-contract-publication>.

¹² CGD Working Group on Contract Publication. (2014). *Publishing Government Contracts: Addressing Concerns and Easing Implementation*. Washington, D.C.: Center for Global Development. Retrieved from <https://www.cgdev.org/sites/default/files/publishing-government-contracts-report.pdf>.

¹³ <https://eiti.org/contract-transparency>.

¹⁴ The authors have intentionally focused on “value” rather than the more simplistic focus on “price” since there are a number of scenarios where comparatively higher power prices may nevertheless deliver tremendous value to customers, such as grid-edge/off-grid and resilient power projects.

Electricity production uses similar technologies worldwide, so this data on contract models and costing from analogous negotiations elsewhere can help spread better practice and help set expectations regarding reasonable costs and terms. These benefits of transparency are also reflected in the global effort to standardize PPAs to expedite contract negotiations and ensure inclusion of critical terms based on recent growth in areas such as renewable energy and battery storage.¹⁵ This will help improve future negotiations both by strengthening contract structuring, and by setting expectations of firms, investors, citizens and governments to uphold market norms for power projects. The more information that is known about an individual project, the more benefit it will provide for purposes of comparison. In an open competitive market, IPP costs (and the terms included in any related PPA) would allow clearer benchmarking.

At the sectoral level, transparency regarding system capacity and pricing models will allow outside parties to reconcile predicted energy demand with the pipeline of power projects, thus reducing the risks of overcapacity and focusing utilities' negotiations on value rather than volume.

In a nutshell: Transparency of PPAs would allow citizens to know who their governments are paying, how much, and what they are expected to deliver. It is the right of taxpayers to know how their money is being spent and what future obligations are being taken on their behalf – which is a claim on future tax revenue. In addition, citizens as well as civil society and private firms can act as independent watchdogs to ensure governments are getting value for money. Transparency also helps reassure any involved parties that the contracting process is fair.

Despite clear evidence that competitive tenders for IPPs produce the greatest value, many IPPs continue to be developed based on unsolicited proposals¹⁶ agreed through direct negotiations rather than open competition.¹⁷ Such projects raise concerns over governance and probity, exacerbating the importance that these contracts are themselves disclosed. Transparency allows for some level of benchmarking against power projects from peer markets to provide comparisons to projects that share similar technology, scale and market risks.

Transparency is ultimately a risk-reduction tool for both project developers and utilities/governments. IPPs tend to have decades-long life-spans that considerably outlast the term of any individual government. Transparency will uncover concerns about deal terms that should allow firms to better judge political risk from government turnover and/or ensure deals have

¹⁵ A sample of PPA standardization efforts include Power Africa's *Understanding Handbooks Series* (<https://cldp.doc.gov/understanding>); Open Solar Contracts (<https://opensolarcontracts.org>); Scaling Solar (<https://www.scalingsolar.org>).

¹⁶ Eberhard, Anton; Gratwick, Katharine; Morella, Elvira; Antmann, Pedro. 2016. Independent Power Projects in Sub-Saharan Africa : Lessons from Five Key Countries. Directions in Development--Energy and Mining. Washington, DC: World Bank. World Bank. <https://openknowledge.worldbank.org/handle/10986/23970>.

¹⁷ Eberhard et al., "Independent Power Projects in Sub-Saharan Africa: Investment trends and policy lessons", <http://www.gsb.uct.ac.za/files/InvestmentTrendsPolicyLessons.pdf>.

broad and durable support across major political groups, rather than benefiting a narrow elite that may or may not be in power for the duration of the contract life.

To be clear, greater PPA disclosure is not a replacement for sound planning, improved governance, competitive procurement, or better contract processes. Transparency around key facets of PPA contracts would instead help create positive incentives in support of these objectives – and ultimately better outcomes for consumers, governments, and investors.

4. For which projects should information about IPPs/PPAs be disclosed?

The starting principle should be maximum transparency in the maximum number of circumstances, with disclosure as the default expectation. There may be legitimate questions about disclosure requirements for contracts between two private parties, but in the case of the power sector, there is typically a public sector actor, as well as a public regulator demanding disclosure and consultation around rate setting, siting and so on. Transparency should therefore apply any time there is a real or potential public financial obligation, even between two ostensibly private parties (e.g., if the utility is a privately-owned for-profit firm). This would need not apply to a strictly private captive power arrangement, such as between an IPP and a private company.

The World Bank's Framework for Disclosure in Public-Private Contracts¹⁸ already suggests a detailed list of recommended disclosures for all public-private partnerships (PPPs) including PPAs from pre-tender documents that incorporate project pipeline details, tenders and requests for proposals, draft contracts and project reports, and aspects of the contract covering financial information, government support, tariffs, performance metrics, termination and renegotiation.

For power projects specifically, contracts and key contracting information can be released without raising commercial confidentiality or classification concerns. In particular, feed-in tariffs which involve standard (public) contracting terms and published prices for renewable power that providers 'fed in' to the public grid (e.g., the UK scheme¹⁹) are almost completely transparent.

Even for bespoke power purchase agreements that remain common in larger independent power projects, there are a number of PPA contract models online, with a library of examples provided by the World Bank.²⁰ There are also some examples of final (unredacted)

¹⁸ World Bank. (2015). *A Framework for Disclosure in Public Private Partnerships*. Washington, D.C.: World Bank. Retrieved from <https://thedocs.worldbank.org/en/doc/773541448296707678-0100022015/original/DisclosureinPPPsFramework.pdf>.

¹⁹ <https://www.ofgem.gov.uk/environmental-programmes/fit/applicants/roo-fit-large-installations>.

²⁰ <https://ppp.worldbank.org/public-private-partnership/resource-library>.

contracts, including National Grid and Cape Wind Associates²¹ contract for an offshore wind farm. Furthermore, competitive processes guarantee²² at least a minimum level of transparency owing to information released in requests for proposals and qualification, evaluation and award processes. As a result, these open, competitive approaches tend to lead to lower prices.²³

South Africa's Renewable Energy IPP Procurement Program (REIPPPP) utilized (a) a standard PPA, (b) an Implementation Agreement with the Department of Energy covering sovereign guarantees as well as penalties and rewards around economic development commitments, and (c) Direct Agreements covering step-in rights for lenders, all of which were non-negotiable and public. Firms submitted bids on the basis of price and development impact (covering factors including local inputs and employment) evaluated by a public scoring system that released price and development impact score. The transparency around the development of South Africa's REIPPPP PPA was so effective that it produced a non-negotiable contract with broad support from developers, bankers and civil society organizations, all of which significantly shortened the contracting process and delivered historically low power prices.

More broadly, a transparent domestic power sector in the U.S. has created a data-rich ecosystem regarding PPAs even though they are frequently between private suppliers and offtakers (i.e., do not involve a government agency as a major contracting party). Detailed information is available regarding wind patterns, capacity factors, finance, ownership, installation, location height and size, suppliers and actual generation, installed project costs, operation and maintenance (O&M) costs, leveled PPA prices for wind, gas and solar as well as details on tax and credits. The U.S. Department of Energy uses this information to produce reports²⁴ on the state of the wind technologies market, its competitiveness and what policymakers and potential purchasers can expect in terms of costs, and producers in terms

²¹ Gerwatowski, R. (2010). *Power Purchase Agreements between National Grid and Cape Wind Associates, LLC D.P.U. 10–54*. Letter, Contract, Washington, D.C. https://ppp.worldbank.org/public-private-partnership/sites/ppp.worldbank.org/files/documents/USA_Power%20Purchase%20Agreements%20between%20National%20Grid%20and%20Cape%20Wind%20Associates_EN.pdf.

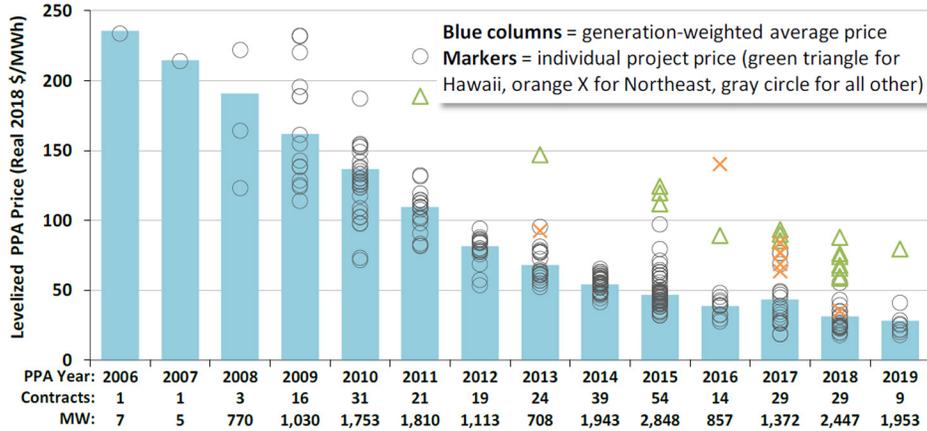
²² Eberhard, Anton; Gratwick, Katharine; Morella, Elvira; Antmann, Pedro. 2016. *Independent Power Projects in Sub-Saharan Africa : Lessons from Five Key Countries*. Directions in Development--Energy and Mining. Washington, DC: World Bank. World Bank. <https://openknowledge.worldbank.org/handle/10986/23970>.

²³ Zhang, Y. F., Parker, D., & Kirkpatrick, C. (2008). Electricity sector reform in developing countries: an econometric assessment of the effects of privatization, competition and regulation. *Journal of Regulatory Economics*, 33(2), 159–178.

²⁴ Office of Energy Efficiency & Renewable Energy. (2018). *Wind Technologies Market Report*. Alexandria, VA: US Department of Energy.

of revenues.²⁵ The Lawrence Berkeley National Lab uses²⁶ this data to compile reports on a range of solar utility PPA features including details of technological choices, installed prices, capacity factors, PPA prices and levelized PPA price of electricity.²⁷ Figure 1 displays an example of the insight those data provide.

Figure 1. US levelized PPA price/MWh



Source: Bolinger, M., Seel, J., & Robson, D. (2018). Empirical Trends in Project Technology, Cost, Performance, and PPA Pricing in the United States—2018 Edition. *no. September*.

In short, if the purpose of the power sector is to deliver reliable electricity at the lowest cost and for the greatest benefit of a national economy, contracts should be in the public realm as often as possible. At minimum, any involvement of a government agency as a counterparty or a potential public sector obligation indicates transparency standards should be an assumption rather than an exception. Even in instances of two private parties, there is a strong case for some transparency in the public interest. If implemented effectively, transparency in the contract process benefits both the private sector through increased

²⁵ This information is collected from a variety of sources, including from Energy Information Administration data collection from power producers, SEC filings, state and federal regulatory agencies and incentive programs, DOE turbine verification programs, data from Treasury Grant forms, and Federal Energy Regulatory Commission filings. SEC usually exclude pricing information in filings, but this information is frequently available from other sources. See *Point Beach Nuclear Plant Power Purchase Agreement Between Fpl Energy Point Beach, Llc And Wisconsin Electric Power Company Dated As Of December 19, 2006*. SEC. (2006). Retrieved 12 August 2021, from <https://www.sec.gov/Archives/edgar/data/783325/000119312507041253/dex1046b.htm>. And see also *Supply Contract and Distribution-Agreement between Changzhou Trina Solar Energy Co., Ltd and IBC-SOLAR AG*. SEC. (2008). Retrieved 12 August 2021, from <https://www.sec.gov/Archives/edgar/data/1382158/000119312508141379/dex416.htm>. The Australian State of Victoria, which regularly publishes the full text of government contracts, does so for power purchase for government use, but excludes the pricing schedules. Ukraine publishes full details of government power procurement (including prices) with independent power producers. See <https://www.tenders.vic.gov.au/contract/search>.

²⁶ Bolinger, M., Seel, J., & Robson, D. (2019). Utility-scale solar: Empirical trends in project technology, cost, performance, and PPA pricing in the United States—2019 Edition.

²⁷ The lab struggled to find actual operations and maintenance costs, although these would not appear in a PPA.

market data to inform investment decisions, and the public sector by demonstrating the long-term value secured for power customers.

5. What specific information should be disclosed?

The foundational principle of PPA transparency is that independent observers should be able to understand and verify who is being paid, how much, and for which services. This should apply both *ex-ante* according to contract details (what is in the contract itself) and *ex-post* during the actual life of the contract (how is the project performing against the contract).

Must-have: The contract + core details

Disclosure should, ideally, include putting into the public domain *the entire power purchase agreement* and subsequent amendments/addendums or linked ‘direct agreements’ between the offtaker and producer. These documents can be redacted where absolutely necessary for commercial confidentiality (see below), but the default should be maximum disclosure.

In addition to the PPA itself, publicly-available data should disclose *core details of the PPA* covering the following (see also Annex B):

1. *Basic information released upon signing* including project location, effective dates, signatories to the PPA, award process, technology, installed capacity and expected generation capacity factor, and agreed project milestones.
2. *Contract terms released within one year of commencement of operations*, including payments, such as signature bonuses, fixed and variable payment formulas (see more below), tax and public-sector finance provisions, government and international financing, public guarantees, performance and related penalties, and termination, force majeure, and decommissioning.

Clarity over key provisions covering payments and costs under different scenarios

At the heart of any PPA is a formula governing the purchase obligation: payments from the offtaker (buyer) to the power producer (seller) made under certain terms. These terms differ between two major types of technologies: dispatchable and non-dispatchable. Dispatchable technologies include gas, diesel, oil, and coal plants that can generate power up to capacity on demand. Non-dispatchable technologies such as solar and wind fluctuate in the amount of power available, determined in part by factors such as local weather. (The distinction between these two sources is fading as renewable energy projects begin to integrate energy storage resources to provide some level of dispatchability.) Even though their terms may differ, projects of all technologies should be equally subject to divulge the relevant information as outlined below.

For dispatchable technologies, the two key components are a capacity charge (how much power a plant could deliver to the grid if demanded by the offtaker) and an energy charge (for energy actually dispatched). These charges are important factors affecting payments, and thus should be incorporated in disclosure as follows:

- *Capacity charges.* The capacity charge often involves weighted payments for availability of power during peak periods.²⁸ The PPA may also lay out downward adjustments in the case that the company cannot deliver on declared capacity.
- *Energy charges.* The energy charge may be linked to fuel costs and variable O&M costs. Some PPAs involve an associated or integrated fuel contract that may lay out the price or formula for fuel and any ‘take or pay’ requirements for gas.

For non-dispatchable technologies, additional PPA provisions that often generate criticism (and public backlash), making them important to disclose are:

- *‘Take or pay’ and/or curtailment charges.* PPAs for variable sources such as wind and solar often specify the price per kilowatt hour delivered to the grid and that payment is required regardless of whether the electricity is used by the consumer, creating the potential for large payments for unused power. Contracts may include a specific ‘curtailment formula’ based on power that could have been delivered given meteorological conditions but was not taken by the offtaker (‘deemed generation’). The curtailment formula involves a power curve which predicts on the basis of project design the net electrical output that the project should be able to generate under particular weather conditions (e.g., solar insolation, wind speed and direction) as measured by meteorological masts and solar meters. These power curves are frequently updated during the life of the plant to reflect actual generation capacity.

Other relevant public interests

Power systems are a public good and key provisions that affect public finances and welfare should also be in the public domain. These include:

- *Special taxation.* Tax treatment will only sometimes be covered in PPAs or in separate agreements involving the IPP – it may be in a separate agreement or not subject to a contract at all. However, this can have a significant impact on the financial performance of a project. Certainly any non-standard tax treatment should be released.

²⁸ Badissy et al. suggest a model formula for capacity payments for hour ‘i’ includes an hourly capacity payment (which may adjust over the life of the agreement), hourly fixed operations and maintenance charge, a period weighting factor that varies by hour reflecting the importance of capacity and the average capacity declared available during that hour. Every term but the last should be laid out in the power purchase agreement. (The last could be made public on a lagged ongoing basis). See Badissy, M. (2017). *Expanding the Understanding of Power Purchase Agreements*. Washington, D.C.: USAID.

- *Guarantees.* Any government or multinational guarantee of payments or exchange risk will significantly alter risks for the investor and should be disclosed alongside direct government or multilateral financing.
- *Performance and penalty clauses.* These can allocate risk, including transmission/interconnection risk and cover penalties to power producers who cannot deliver contracted power.
- *Social or environmental conditions.* Contracts or related documents usually also include specific environmental and social conditions, including emissions levels, water quality/use, carbon credit ownership linked to renewable production, as well as local content requirements and resettlement terms. These terms and conditions will be of particular interest to varied relevant groups and is an area where outside verification has a particularly important role.
- *Transfers of Interest and Beneficial Ownership.* It is increasingly common for power projects to be developed by one party, then sold to another after the project becomes operational. Tracking these transfers of interest and understanding the beneficial ownership of the IPP (which is often a special-purpose vehicle) are essential for utilities/regulators to maintain their oversight ability and manage issues such as taxation or tort liability.
- *Exit and closure terms.* Finally, the contracting parties should disclose terms around expiration, transfer and remedies in event of default and/or failure to deliver, with a particular focus on dispute resolution jurisdiction and rules (national courts, UNCITRAL arbitration, etc).

Nice-to-have: Information on the wider sector and procurement ecosystem

In addition to individual contracts and core details, best practice would build on existing transparency efforts and regularly publish documents covering (see also Annex C):

1. Any existing legal framework that dictates PPA disclosure, such as a law or policy, parliamentary oversight or approval, or securities filings.
2. Market-level information such as demand forecasts and sector planning documents, the IPP selection process, and relevant procurement plans.
3. Surrounding agreements to PPAs such as relevant:
 - concession agreements providing the producer the right to develop and operate the power plant;
 - grid interconnection agreements;
 - fuel supply and transportation agreements;
 - related fuel contract terms;
 - operation and maintenance and service agreements;
 - government financing agreements, including loan and equity agreements with third parties;
 - any sovereign support and/or credit support agreements with governments and multinational institutions.

4. Ongoing payments, such as regular information regarding capacity, fuel price, service quality and energy provision to enable independent verification.

Responsibility for disclosure

The publication of PPAs should be mandated by governments at a policy level and overseen by state agencies or trusted third parties. Only governments can overcome the short-term collective action incentives that deter individual investors or project developers from voluntary disclosure. At the same time, investors, especially development finance institutions which measure their success in more than purely financial returns, could encourage governments to move toward greater transparency and provide the PPA contract data for their own projects (see below).

Timing of release

Greater transparency should facilitate the process of building infrastructure, not become an additional barrier to that development. The timing of PPA publication and the release of contract information is therefore critical. Transparency *during negotiations* could have harmful effects. However, a commitment to disclosure *known to all parties ahead of time* would help to create positive incentives, even if the actual release of final information would happen in sequence, with basic project data published on signature while contract terms, additional agreements, and the PPA itself could all be released within one year after the commencement of operations (See Annexes B & C).

Scope of disclosure coverage

The prevalence of opaque PPAs means there are hundreds of undisclosed contracts in force. Whether governments decide to disclose past contracts would be a matter of negotiation between contract parties, but such a step may raise the political costs of moving toward greater transparency by igniting opposition. Thus, this proposal does not specifically call for backward-looking investigations of past contracts, but rather setting forward-looking standards for all new contracts.

Format of release and usability

The format of disclosure also matters. Scanned PDFs are not nearly as accessible as a combination of standardized data format and searchable documentation.

Reasonable exclusions

What does not need to be disclosed? A limited set of legitimate commercially-confidential information can be redacted. Experience from procurement transparency suggests the

amount of information needed to protect commercial competitiveness is relatively small.²⁹ Exclusions might consist of private financing arrangements of the parties, costs of finance from commercial lenders, the estimated return on investment, and any internal financial or management information included in the contract. Note that debt obligations and related cost assumptions for government and/or multinational financing should not be redacted.

6. PPA transparency in the global open ecosystem

Any PPA transparency initiative should build on the substantial other transparency efforts underway, specifically the work of the Open Contracting Partnership and the World Bank. Governments and lenders should agree to a minimum standard of disclosure, with some core group of first-movers helping to generate momentum. A full list of potential allies involves:

- *The Open Government Partnership*. Over half of OGP members have an active open contracting commitment³⁰ (in either a 2017–2019 or 2018–2020 action plan), with eleven specific commitments in infrastructure and transportation, making it the most significant policy area for open contracting under the OGP.
- *The Open Contracting Partnership*. OCP, an independent nonprofit group, has provided support to a number of OGP participants and others in terms of improving transparency and utility of information along the entire procurement chain, including in infrastructure.
- *World Resources Institute*. WRI, a global environmental research organization, has an electricity governance initiative.³¹
- *Civil society organizations* already promoting transparency, openness, and good governance. Nongovernmental and citizen groups advocating for public accountability, whether specifically in the electricity sector or not, could help to provide the bottom-up pressure for disclosure, particularly where power is unreliable or expensive and in markets like Ghana or Kenya, where secret PPAs have sparked considerable controversy.
- *The World Bank, Asian Development Bank, African Development Bank, and other multilateral banks*. MDBs already support IPPs as advisors or investors and may be interested to build on their significant work around transparency in PPPs.³²
- *Bilateral and multilateral DFIs*. The IFC and other DFIs (DFC, CDC Group, DEG, KfW, Proparco, FinDev Canada, NorFund, etc.) that back public-private

²⁹ CGD Working Group on Contract Publication. (2014). *Publishing Government Contracts: Addressing Concerns and Easing Implementation*. Washington, D.C.: Center for Global Development. Retrieved from <https://www.cgdev.org/sites/default/files/publishing-government-contracts-report.pdf>.

³⁰ Foti, J., Arce, S., Falla, R., Hickle, J., Galang, K., Tuths, P., ... & Weyandt, R. (2019). Open government partnership global report-volume 1: democracy beyond the ballot box.

³¹ <https://www.wri.org/research/electricity-governance-initiative>.

³² World Bank. (2015). *A Framework for Disclosure in Public Private Partnerships*. Washington, D.C.: World Bank. Retrieved from <https://thedocs.worldbank.org/en/doc/773541448296707678-0100022015/original/DisclosureinPPPsFramework.pdf>.

partnerships could develop, implement, and promote routine disclosure principles for power-sector PPPs—the Four Ps,³³ perhaps. These institutions have financed billions of dollars of projects and have a small library of PPAs from the past decade that if disclosed, could establish a robust benchmark for balanced and durable power project agreements.

- *The Millennium Challenge Corporation*. This US government agency provides grants to high-performing countries who have exhibited strong governance standards. The MCC has been involved in the power sector in a number of compact countries³⁴ and this proposal would fit squarely within its mandate.
- *The G20 or G7*. These fora of major economies have regularly promoted sustainable infrastructure standards. For instance, Japan has led on the creation of principles for quality infrastructure investment at the G7³⁵ in 2016 and the G20³⁶ in 2019, while the United States worked closely with Japan and Australia on a proposed Blue Dot Network³⁷ for infrastructure governance.
- *Commercial Lenders and Institutional Investors*. This important group of equity and debt providers often base their investment decisions on threshold issues around project and market risk since they are seeking stable long-term returns. Government disclosure of existing PPAs reduces risk perceptions by providing the depth of financial data needed to demonstrate that a market has sufficiently “matured” to satisfy their risk-limits.

7. Conclusion: An independent *PPA Watch* could help to raise awareness and generate momentum

There is no need for an elaborate apparatus or a new multinational organization. There may however be a useful role for a modest independent effort – *PPA Watch* – to create a platform to report PPA data and score countries on their level of information release around contracting as part of an effort to bring attention to the issue and gather momentum for establishing new disclosure norms.

The initiative could potentially work in partnership with local civil society organizations to collect public data about PPA implementation over the life of projects and share information

³³ Jarvis, M., & Kenny, C. (2018). *It's Time for a Code of Conduct on Transparency for Financiers Backing PPPs*. Center For Global Development. Retrieved 10 August 2021, from <https://www.cgdev.org/blog/its-time-code-conduct-transparency-financiers-backing-ppps>.

³⁴ <https://www.energyforgrowth.org/memo/mcc-compacts-and-the-power-sector/>.

³⁵ *G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment – Infrastructure Tool Navigator*. Infrastructure Tool Navigator. (2016). Retrieved 12 August 2021, from <https://sustainable-infrastructure-tools.org/tools/g7-ise-shima-principles-for-promoting-quality-infrastructure-investment/>.

³⁶ *G20 Principles For Quality Infrastructure Investment*. Japan Ministry of Finance. (2021). Retrieved 12 August 2021, from https://www.mof.go.jp/english/policy/international_policy/convention/g20/annex6_1.pdf.

³⁷ *Blue Dot Network – United States Department of State*. United States Department of State. (2021). Retrieved 12 August 2021, from <https://www.state.gov/blue-dot-network/>.

that can be used to pressure their own governments to meet minimum disclosure standards. This would not only be a resource for citizen groups, but also for governments and investors by helping to raise the bar on contracting governance, creating incentives for better practice, and enriching the information available in a competitive marketplace. In so doing, *PPA Watch*'s ultimate objective would be to support efforts to deliver cheaper and more reliable electricity to people and businesses.

Annex A. Likely objections to PPA transparency with informed responses

1. *Disclosure will hurt participating firms and clear the field for companies/actors subject to lower disclosure standards.* Bringing markets up to global transparency norms raises the bar for all and serves to clarify the benefits of an open economic model. Companies and countries should encourage global adoption of transparency standards through engagement with their own governments and international agencies financing and signing PPAs.
2. *Disclosure will put new projects at risk.* Once a critical mass accepts basic disclosure and a norm is established, the outliers will become obvious. This should help to identify the high-quality investors from those that prefer to operate in opaque environments – which should be a red flag to governments.
3. *PPAs cannot be published because they are commercially confidential.* Data with legitimate confidentiality requirements may be kept private. Recent experience with government procurement transparency suggests the amount of information needing protection will be limited.
4. *Transparency will only complicate project negotiations.* The commitment to eventual disclosure of final details should be agreed ahead of time, but the actual disclosure of contract information would only need to happen after the project is underway, such as within one year after the commencement of operations date.
5. *Price disclosure will create confusion.* This proposal puts the decision of sharing pricing data or pricing formulas on the offtaker or their government, not on the financier/investor. Regardless, pricing information is already publicly available in many markets and in all open auctions. Misguided comparisons (e.g., solar pricing across very different markets) are already happening using oversimplified price information or anecdotally via the press. Transparency will better inform that debate. Over time, greater public discussion about energy options and pricing is healthy for a competitive marketplace.
6. *The World Bank already does this.* The Bank's Framework for Disclosure in Public-Private Partnership Projects already suggests good practice is to release all of this information. The Bank also collects data in the Private Participation in Infrastructure (PPI) Project Database covering some elements of project deals. But much of this information is limited or disclosed irregularly. Making it regular and a standard for accessing responsible development finance resources would help to set a global norm.

Annex B. Proposed basic PPA disclosure

Project information (released on signing)

1. **Project name & location:** _____
2. **Status:** operating under construction signed proposed
 other _____
3. **Award process:** competitively bid directly negotiated
 other _____
4. **Signatories:**
Generator: known _____
 unknown _____
Offtaker: known _____
 unknown _____
5. **Dates:** PPA signing _____ commissioning _____
term _____
6. **Technology:** hydro solar wind geothermal HFO diesel gas
 coal hybrid _____ other _____
7. **Installed capacity** _____ MW and **projected average capacity factor**
_____%
8. **Government guarantees** none direct via utility
 other _____

Contract terms (released within one year of commencement of operations)

9. **Government financing:** amount US\$ _____
Terms: grant loan. If loan term _____ rate _____ grace period

10. **Official international financing:** amount total US\$ _____
Number of agencies: _____
Each agency: Name: _____ Type: grant loan equity
 guarantee
Financing terms: _____
11. **Ownership:** government _____%, firms _____%
Names of all owners with % _____
12. **Special terms:** tax holidays _____ accelerated depreciation

13. **Inclusion of specific clauses** related to
 arbitration _____
 governing jurisdiction _____
 limits on transfer of interest _____
 disclosure of transfer of interest required? yes no _____
 restrictions on future changes to taxes? yes no _____
 restrictions on future changes to regulations? yes no _____
14. **Payment obligations for the offtaker**
 take-or-pay peaker alternative _____
Pricing formula undisclosed disclosed _____
15. **Termination costs** (force majeure or breach of contract)

16. **Other payment obligations** resulting from disruption of project operations

Annex C. Proposed secondary data phases for disclosure

Phase 2: Market environment information

1. **Legal obligation to disclose any PPA information:**

- law to disclose
- policy to disclose
- parliamentary oversight
- parliamentary approval of guarantees
- securities filings
- Other _____

2. **Public availability of any of market information:**

- National demand forecasts
- Sector planning documents
- IPP selection process
- Related procurement plans
- Other _____

3. **Public disclosure of any relevant surrounding agreements:**

- construction contracts
- concession agreements
- grid connection agreements
- fuel contracts
- government financing agreements
- sovereign support/other credit support agreements
- Other _____

4. **Payment obligations for the offtaker**

Hypothetical prices paid per available kwh if

- (a) zero power is supplied to the offtaker _____ \$/kWh
- (b) all power is supplied to the offtaker _____ \$/kWh

Phase 3: Publishing the PPA contracts

- file upload