



Energy+

Private Sector Consultation

New Delhi, India

November 7, 2012

Executive Summary

On behalf of the Energy+ initiative, Garten Rothkopf organized a private sector consultation in New Delhi, India on November 7, 2012. The New Delhi consultation, the fourth in a global series that started in Washington, DC in November 2011, included more than fifty participants from leading project development firms, investment funds, technical consultants and equipment manufacturers working in India as well as South Asia more broadly. Participants offered insights into the obstacles to and opportunities for scaling up the use of renewables and increasing energy access. Wireless polling devices were used throughout the day to gauge participants' opinions on various topics pertaining to investment and project development opportunities.

The first session of the consultation focused on success stories and challenges of investing in renewable energy and energy efficiency projects in India and other developing countries. The second session identified the most attractive incentives for investment. The final session offered participants the opportunity to suggest ways in which Energy+ could accelerate private sector activity. There was a broad range of incentives identified as being critical to project success, some of which were echoed in prior consultations, including a consistent and uniform policy framework, access to information, and standardized models and processes. However, there were also a few incentives identified that were unique to New Delhi, such as the facilitation of innovative partnerships between industries and institutional support for financing and innovation.

Based on the discussions throughout the three sessions, it is clear that there is an opportunity for Energy+ to work with the public and private sectors in developing countries such as India to leverage the unique understanding they possess into the emerging policies, technologies and business models that will allow Energy+ to achieve the twin goals of expanding energy access and ensuring a low carbon future.

Opening Remarks

Amb. Ann Ollestad opened the consultation with brief remarks on the origin and vision of Energy+ and the goals for the day. She spoke about the challenge of achieving universal energy access by 2030 and the critical importance of the private sector in reaching that goal. She then outlined how Energy+ was structured to accelerate commercial investments and mobilize the private sector. She described how Energy+ allocates public money to developing country governments to support policy and regulatory reform and employs a phased approach centered on the idea of payment for results. The goal, she said, is to create an enabling environment that allows private sector capital to be effectively leveraged. She then discussed the importance of the

private sector consultations in this process. India was selected, she said, because it is a country that has been at the forefront of tackling the challenges of energy access and climate change, and is home to a vibrant private sector and government committed to addressing these issues. Amb. Ollsetad closed by emphasizing the commercial potential that exists in the energy access space, and the importance of enabling the private sector to take advantage of that potential in order to ensure the twin goals of the Energy+ initiative—universal energy access and a low carbon future—are achieved.

Session 1: Success Stories and Challenges

Participants in the first session discussed the most notable challenges, as well as lessons from successful projects, for the private sector in expanding energy access and achieving scale in developing countries. James Abraham of Sunborne Energy, Vinod Kala of Emergent Ventures India, Harish Hande of SELCO-India, and Sanjay Dani of Serra Power kicked off the conversation by drawing on their own experiences to offer insights on the major hurdles and strategies for enabling project success.

Critical Barriers

Participants identified four broad categories of challenges faced by the private sector in India specifically and developing countries more broadly: an uncertain and conflicting policy landscape, complex and biased regulatory approval process, a lack of access to appropriate financing, and a lack of innovative business models for rural markets. While many of the points on policy and financing were echoed in previous consultations, the focus on business models for rural markets was notable in India, with participants stressing that even if all the challenges were addressed, there was still a critical need to develop innovative and effective models that could tackle the issue of energy access at scale. This was reflected in the polling, with the percentage of participants indicating that existing project development models are not effective and new models need to be developed recorded at 35%, compared to 13% in Nairobi 16% in Guangzhou, and 22% in Washington, DC.

- **Uncertain and Conflicting Policy Landscape:** Nearly all attendees were in agreement that, while the national government in India offered robust support for renewables and energy efficiency, these policies are often not implemented consistently or uniformly enforced across states due to the weakness of the central government. The result, attendees observed, is a lack of policy continuity and a patchwork of varying schemes that increase the risk of non-payment and make it exceedingly difficult for investors to project revenues. Sumant Sinha of ReNew Power pointed to the state-by-state variations in feed-in-tariff payment levels as one example of this challenge. Sanjith Shetty of Soham Energy provided another example in which certain states ignored the Central Electricity Regulatory Commission’s (CERC) guidelines on renewable energy certificates (RECs), resulting in policies that upset the financial models he used to raise money. Inderpreet Wadhwa of Azure Power agreed, noting that while the basic framework for renewables in India is very strong, a lack of enforcement across states is

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reducing the effectiveness of federal policies. He noted that in Tamil Nadu utilities have not been paying for wind power under a federal incentive scheme for over a year. Rakesh Bakshi of RRB energy argued that while government policies are helpful, consistent policy is critical: “what is important is consistent policy... since projects run for 20 years and you only start making money after 4-5 years.” This sentiment was echoed throughout the day, with participants arguing that the basic tenets of policies cannot be changed on such short notice. Participants, such as Sanjay Dani, also pointed to conflicting policies implemented by the government—such as domestic content requirements that reduce global supply chain efficiencies and increase the cost of renewables and energy efficiency projects—as a major challenge.

- **Complex and Biased Regulatory Approval Process:** There was also near unanimous consent that the regulatory approval process for projects in India was severely impeding the growth of energy access solutions, with participants pointing to excessive permitting requirements, multiple agency jurisdictions, and a lack of attention to small-scale projects as three major issues creating tremendous uncertainty and quickly turning projects unprofitable. Participants cited excessive clearance requirements and multiple agency

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jurisdictions as issues that can delay projects for years, with Sanjith Shetty remarking that “the more and more clearances... the more complicated it gets...[the government] gives us three years to set up a project... after which they ask for extension fees. Now one arm is dealing with clearances and the other arm is taking fees.” Participants also noted that the Ministry of Power (MoP), which is not as committed to expanding renewable

energy as the Ministry of New and Renewable Energy (MNRE), is responsible for nearly every important component in the project approval process—including PPA, banking, and land arrangements. There was also some consensus among participants that because the energy access gap is so large, small-scale projects (5-20 MW) are often ignored by regulators in favor of large-scale projects (100-500 MW), a phenomenon that Sanjith Shetty noted discourages small-scale developers.

- **Lack of Access to Appropriate Financing:** Participants also discussed a fundamental challenge of obtaining appropriate financing for many energy access projects, which inhibits developers from accessing capital at costs that allow projects to be economical. Participants identified a range of factors that are creating this issue. For on-grid projects, James Abraham identified access to growth capital and risk capital as important and equally challenging. For growth capital, he cited the overexposure of banks to the power sector and the reluctance of international financiers to enter more the volatile developing markets. For risk capital, he cited the rapid changes in technology as a major issue. Other participants engaged in on-grid and off-grid projects echoed similar points. Off-grid project developers listed a range of further challenges that prevent access to sustainable financing. Sanjay Dani noted that many financiers were not equipped to handle the various financing structures, such as the pay-as-you-go model, that are often used for

distributed projects. Uma Rajarathnam of Enzen Global Solutions agreed, noting that it was difficult to attract financing, specifically debt capital, for entrepreneurs targeting these markets because banks are hesitant to fund a large number of new business models and technologies.

- **Lack of Innovative Business Models for Rural Markets:** Participants spent a significant portion of the conference discussing the need for innovative business models, noting that while the other challenges are certainly important, even if they were solved, the innovation that is required to successfully tap the commercial potential of rural markets for energy and accelerate the flow of private sector capital has not happened. Tanvi Mehta of Arc Finance noted that while supportive policies are helpful, “the focus needs to be on business models, because even if all this money came in we don’t have the business models where the money is going to be implemented in the right way”. Ramya Krishnaswamy of the World Economic Forum and Tobias Engelmeier of Bridge to India backed up her point, arguing that the business model conversation is key, as there is a serious question as to whether the private sector has the right models at present, and there is a need for institutional support for the innovative work being done at the stage where the fail rate is very high. Harish Hande summed up the sentiment in the room with the observation that many private sector players are not ready to access the off-grid market in a way that is innovative, and the focus needs to be at the rural community level, creating a private sector among the poor. Without this business model innovation, the participants agreed that addressing the key challenges for many energy access projects—ensuring an affordable price, quality product, and effective maintenance and after sales services—at scale will remain largely unreachable.

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Key Components of Success

Participants also outlined the factors that enabled projects to overcome barriers and ensure success—most notably the presence of smart, well-designed policies, a consistent policy support system, and institutional support for financing and innovation.

- **Smart, Well-Designed Policies:** Participants eschewed a one-size fits all approach to policy mechanisms and emphasized the importance of smart, targeted support systems to achieve specific goals in order to ensure projects are ultimately successful. Hemant Lamba of the Ashden India Collective noted that there was no single universally effective policy approach; he had seen success with both direct and indirect subsidies, and ensuring success requires identifying the areas where either has worked. Rakesh Bakshi agreed, noting that it is important to identify the strengths and potential for renewables in each region and design policies around those unique attributes. Participants followed up by giving examples of situations where subsidies have been deployed without first asking if the subsidy it is the right solution, resulting in the adoption of renewables systems and technologies that failed shortly after implementation. The consensus among the

participants was that projects benefit immensely from policy support systems that are focused and designed to ensure that the issues of price, quality, and support are addressed sustainably.

- **Consistent Policy Support System:** When the government is committed to a consistent policy support system, participants agreed that there is the potential for widespread success, as investors will feel more comfortable committing capital. At the national level in India, participants pointed to the recent progress enabled by the accelerated depreciation and generation based incentives passed by the government, without which, Sumant Sinha argued, it is difficult for renewables to become competitive. At the state level, Tamil Nadu was cited by Inderpreet Wadhwa as a state where consistent government support had done “phenomenal things” for the wind industry—and where the lack of consistent support now was causing significant harm. Strong, consistent support of the government increases the potential for a stable market environment, which participants agreed is important to enabling commercial investment. Ravi Khanna of the Aditya Birla Group backed this point up by emphasizing that the commitment of the government to a sustainable policy support system helps ensure quality of revenues, a critical component of successful projects.
- **Institutional Support for Financing and Innovation:** Participants also highlighted the importance of institutional support to help foster an effective financing and innovation ecosystem. This support allows critical challenges to be addressed at the community level and enables the consumers to lead the development of solutions, which are then more sustainable. Harish Hande discussed the need to “create appropriate ecosystems where the poor start becoming the private sector... because many in the private sector do not understand what type of light a tomato vendor will want versus a paddy farmer.” He offered an example of how this approach enabled success during the green revolution in India, which transformed agriculture and rural communities. Harish pointed to the rural banking system that supported the green revolution and training programs as key to ensuring the needs of rural communities were met through the private sector. Other participants echoed Harish’s points, arguing that the green revolution also fostered innovation by including structures that allowed technology breakthroughs to move from lab to land quickly. Arun Nemani of Intelligent Energy agreed that creating an institutional support system is critical and drew a parallel to the idea of micro power plants, which he argued could support micro entrepreneurship among rural communities.

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Session 2: Direct and Indirect Incentives

Following the first session, featured speakers Rakesh Bakshi of RRB Energy, Inderpreet Wadhwa of Azure Power, Sumant Sinha of ReNew Power, and Hemant Lamba of Ashden India Collective kicked off the second session by outlining the direct and indirect incentives that are

important to make a market attractive to private investors. The participants identified five broad categories of incentives: access to information, removal of fossil fuel subsidies, innovative industry partnerships, payment security, and standardized models and processes. Participants were notably insistent that the reform of the energy pricing system could have major benefits for renewables and that partnerships between local industries were a potentially powerful tool to address operational challenges involved in achieving energy access, with the percentage of participants indicating that operations & maintenance as the role best served by local partners recorded at 40%, compared to 18% in Washington DC, 20% in Guangzhou, and 29% in Nairobi.

Access to Information

Throughout the day, participants stressed the critical importance of access to information, both in terms of the private sector having access to key regulatory and policy developments and governments having access to best practices and metrics for policy success. Pratap Chandnani of Green Shakti noted that in India there are so many agencies involved in the development and management of incentives at the federal and state level that it was often difficult to determine what incentives are actually available. Tobias Engelmeier echoed his point and argued that there is great value in information sharing, particularly information on the cost of power. Participants agreed and endorsed the creation of open databases that could provide more clarity on policies and other important information as a potentially powerful mechanism. Participants also endorsed the potential benefit of an index of project approval timelines as an incentive that could help developers compare regions and regulatory bodies and address burdensome regulatory processes. For governments, there was continued emphasis on the need to create best practices to help inform renewables and energy efficiency legislation being developed in India and developing countries. There was also a need highlighted by several participants for governments to be able to monitor and measure the success of incentives, to determine the policies that are working, and those that are not.

Removal of Fossil Fuel Subsidies

Throughout the day, participants returned again and again to the issue of the pricing of energy, and the enormous advantage that fossil fuels have over renewable energy due to “hidden subsidies”, as Rakesh Bakshi termed them. If you take away the subsidies, participants argued, the argument over incentives is no longer necessary for many renewable technologies, as these technologies are cost-competitive with various fossil fuel sources. This was a point Sumant Sinha made in his opening remarks, as he explored the distorted pricing system in the Indian power sector and how reform could solve the issue of incentives: “In the power market in India, we don’t have free market pricing... If you take away the distortions, coal should be selling at a per unit basis of five to six rupees. At that price level, wind becomes very competitive, even without incentives.” This point was echoed by Rupesh Agarwal, who noted that free market pricing is the transformational change that could both address the issue of incentives and free up capital for the government to use on other priorities, such as funding power evacuation infrastructure.

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Innovative Industry Partnerships

To a greater degree than in previous consultations, participants explored the potential for partnerships between energy access project developers and other complimentary industries; in particular, telecommunications, consumer electronics and fast moving goods, water, and agriculture. These partnerships were noted to be a potentially powerful strategy for addressing a range of critical challenges to expanding energy access, including the issue of rural demand, distribution and pricing, consumer financing, and maintenance. Arun Nemani note the nexus of telecom and energy was an especially interesting concept, and outlined one potential model in which a telecom tower and micro power plant are installed, and an anchor tenant is brought in to sustain demand and help build a community. Participants agreed that this approach could work, noting that for telecommunications firms, access to energy at the rural level is a major challenge, and that a model where renewable power was generated on-site would be attractive. Ramya Krishnaswamy argued that exploring the potential to bring together industries that make sense is key, as it would allow risk capital to be more easily divided among sectors.

Payment Security

Given the lack of enforcement of key policy incentives across the states, the risk of payment default was highlighted as an area where mechanisms could be designed to de-risk projects for investors and encourage the participation of financial firms who are typically unwilling to take on the higher risk of renewable and energy efficiency projects in developing countries. These firms could in turn offer lower-cost capital financing, enabling a wider range of projects to be successful. The idea of a payment security mechanism was brought up by several participants, including Aparna Khandelwal of Ckinetics, Uma Rajarathnam, Rupesh Agarwal and Rakesh Bakshi, who noted that payment security was “a major issue.” Inderpreet Wadhwa also addressed the issue of payment security, both in terms of securing payment from the state and utilities, and from any potential volatility in the dollar-rupee exchange rate, which he noted discouraged international investors from participating in the Indian market. An additional payment security mechanism, he argued, could be a mechanism to mitigate currency volatility.

Standardized Models and Processes

As in previous consultations, participants also highlighted the potential for standardized models and processes that could help reduce the uncertainty and cost of analyzing divergent contracts and bidding documents as well as the difficulty of measuring and modeling project risk. Uma

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- Uma Rajarathnam, Head of Clean Energy and Environment Practice, Enzen

Rajarathnam argued that she “would be able to attract more capital, especially in the decentralized renewable energy space and concentrating on energy access [with] standard cookie cutter models”, that would reduce the uncertainties associated with new business models and technologies. This could solve both the financing issues associated with a lack of access to low cost

capital and the regulatory delays associated with approval and permitting processes. James Abraham backed up her point, noting that standardized contracts could be a way to help banks assess risks through the development of standard risk and rating assessment metrics.

Session 3: Role of Energy+

The third session focused on how Energy+ can effectively address the challenges to expanding energy access and mobilizing the private sector to take investments in renewable energy and energy efficiency to scale. Featured speakers Ravi Khanna of the Aditya Birla Group, Rupesh Agarwal of Ernst & Young, Sanjith Shetty of Soham Energy, and Pratap Chandnani of Green Shakti opened the discussion with recommendations, and each participant offered their own thoughts throughout the session. The suggested approaches fell into four broad categories: policy and regulatory advisory support, fostering business model innovation, facilitating access to information, and securing revenue streams. The participants agreed that the opportunity is there for Energy+ to make a transformational impact, but the initiative needs to be focused on where it can add the most value.

Policy and Regulatory Advisory Support

- Advocate the national government for uniform, consistent policy incentives across the country that are aggressively enforced, particularly those associated with mandated payment obligations that states/provinces and utilities are required to fulfill
- Select a number of key regions and work to develop smart, well-designed policy support mechanisms that incorporate long-term goals and build on the strengths of the region while advocating for the enforcement of important national incentives
- Target critical regulatory agencies at the national and local level and advocate for streamlining processes for project approval, permits, clearances and land leasing, as well as supporting programs to encourage small-scale project development
- Advocate for the removal of fossil fuel subsidies, either through an existing initiative, or by directly appealing to the federal government for fundamental pricing of energy on the production or consumption side

Fostering Business Model Innovation

- Support incubation funding outside government-to-government channels, targeting companies and organizations that work with early-stage entrepreneurs on innovative business models in the energy access space
- Facilitate the development of partnerships between energy access developers and complimentary sectors through research into potential collaborative structures and building networks between industries
- Develop networks with international financiers and start-up advisors that early-stage entrepreneurs working on energy access solutions in developing countries can leverage for financing, support and guidance
- Support the development of financing and innovation programs within rural communities to enable the establishment of infrastructure that can support rural entrepreneurs and implementers who are addressing these challenges

Facilitating Access to Information

- Create a database that is easily accessible to investors and developers that provides a one-stop-shop for policy and regulatory developments at both the national and regional level that are relevant to stakeholders in the energy access space
- Compile and host an index that shows the speed of project approval for a range of technologies by country, region, and regulatory agency that could assist investors and developers and incentivize the government to reform burdensome processes
- Support the development of best practices for renewables and energy efficiency policy that can be used by developing country governments to inform the drafting of domestic energy policies and plans
- Support the development of a mechanism for measuring the total impact of specific incentives so that governments are able to calculate and monitor returns on incentives and determine the success rate of these programs

Securing Revenue Streams

- Facilitate the development of payment security mechanisms that are able to secure off-take agreements and mandated incentive payments from obligated entities to help de-risk projects for investors
- Mitigate the risks associated with currency exchange rate volatility by working through existing organizations tackling this issue or by supporting the development of financial instruments that can hedge against exchange rate risk

Closing Remarks

Amb. Ann Ollestad closed the consultation, re-iterating the key concepts of Energy+ and praising the participants for their revealing insights into the challenges and potential solutions to the issue of expanding energy access. She discussed the opportunities identified during the consultation, in particular the possibility of linking renewable energy with other sectors, such as telecom. She reiterated her hope that this was the beginning of a productive working relationship with the participants and promised to follow up in the months ahead to keep them informed as the initiative moved forward.