



**Global
Sustainable Electricity
Partnership**

Formerly e₈

UN-Energy

2012

Strengthening Public-Private Partnerships to Accelerate Global Electricity Technology Deployment

**Recommendations from the Global Sustainable Electricity
Partnership-UN-Energy Survey – 2nd Edition**



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Message from the Chair of the Global Sustainable Electricity Partnership



World population is expected to grow from 7 billion today to over 9 billion in 2050, translating into increased pressure on a number of natural resources, among them those that supply energy. Without changing our current production and consumption patterns, the world economy is projected to need 80% more energy in 2050, with a mix not very different from today.

It makes political, economic and environmental sense to leave this dangerous path. Fortunately, a variety of options are within reach to mitigate the risks caused by this unprecedented growth. The way we generate, distribute and use electricity must be an important chapter in all proposed scenarios, regardless of their political colouring.

For twenty years, the Global Sustainable Electricity Partnership has been promoting a sustainable path to develop the global power sector, helping give access to affordable, clean and secure electricity for all. We actively share our industry's expertise with the developing world, and in so doing, we regularly cooperate with the public sector. By contributing their institutional, regulatory, financial and local expertise, public bodies help us successfully implement projects and human capacity-building activities.

From these experiences, a number of lessons have emerged. Some may seem self-evident, but others deserve further analysis:

- Better coordination is required between public and private sectors in their efforts to provide access to sustainable electricity for all.
- A favourable business and regulatory environment with transparent decision-making mechanisms is essential to attract private investors.
- Money alone does not bring change. Capacity building, a sound policy framework and good governance are at least equally important.
- Public subsidies should be avoided whenever possible, especially for the long run.

Knowing the importance of private and public sector collaboration to provide clean, reliable electricity, together with UN-Energy we have made recommendations for strengthening public-private partnerships (PPP) using the findings of our first global survey among PPP stakeholders completed last year. To build upon these results, a second wider survey was conducted this year, and the results are presented in this report.

Based on their practical experience, respondents to the new survey recommended supporting policies and mechanisms to make PPPs more effective and better at securing long-term investments. Respondents also identified the kind of support they need most to establish strong PPPs: capacity building, networking with relevant institutions, guidance with financing issues and demonstration projects.

In broad terms, the outcomes of this second study support our position that electrifying the developing world in a sustainable way is primarily a political task that needs strong partners from both the public and private sectors. The Rio+20 conference in June 2012 comes just in time to explore how stakeholders can better promote sustainable development together.

In keeping with the United Nations *Sustainable Energy for All* initiative, we believe access to sustainable energy is the solution, and we know that, even though it only delivers about one-third of the world's total electricity production, the Partnership can only accomplish its mission when it leverages members' expertise and resources in cooperation with the public sector and other partners.

Juergen Grossmann

Chief Executive Officer, RWE AG
Chair 2011–2012, Global Sustainable
Electricity Partnership



Tuvalu Solar Power Project

Message from the Chair of UN-Energy



This latest report emerging from the UN-Energy and Global Sustainable Electricity Partnership partnership is an extremely useful contribution to the global energy dialogue. The Secretary-General's initiative on *Sustainable Energy for All* underlines the importance of finding new and innovative partnerships between governments, the private sector and civil society that can help create the conditions necessary for successful investment in sustainable energy.

At the January 2012 meeting of the Secretary-General's High-level Group on *Sustainable Energy for All*, which I had the honour to co-chair, a Framework on Action was developed toward achieving the initiative's objectives in the areas of energy access, energy efficiency and renewable energy. We have since launched an Action Agenda that begins to set the business case for the goals we have put forward.

In the run-up to the launch of the *Sustainable Energy for All* initiative, UN-Energy and the Global Sustainable Electricity Partnership convened a Global Summit in June 2011 at the United Nations in New York to highlight our joint recommendations for strengthening public-private partnerships in the field of energy. I believed then, as I do now, that it is critical for UN Member States and country teams to create and sustain partnerships with the private sector if we are to radically change our energy systems.

This year's publication again demonstrates a strong agreement among stakeholders that improved access to affordable and reliable electricity supplies and accelerated economic development are the two most important benefits of public-private partnerships. I am pleased that the respondents to our survey reported that they have been creating low-risk political, legal and regulatory conditions to help support a transition to sustainable energy. This is fundamental to enable the private sector to invest, build and operate electricity projects.

I thank all who have supported our joint UN-Energy and Global Sustainable Electricity Partnership work, and applaud your ongoing efforts to ensure that these public-private partnerships remain vibrant and effective.

A handwritten signature in black ink, appearing to read 'K. Yumkella'.

Kandeh K. Yumkella
Director-General, UNIDO
Chair, UN-Energy

Executive Summary

According to the United Nations and the International Energy Agency (IEA), approximately one person in five around the world has no access to modern electricity services. Most of these 1.3 billion people live in sub-Saharan Africa and developing Asia, and more than twice that number—2.7 billion people according to IEA estimates—rely on wood, coal, charcoal, or animal waste for cooking and heating.¹ Furthermore, 1 billion people are expected to remain without electricity in 2030, based on existing and expected energy policies and global population projections.² Not only does this hamper sustained economic growth, it also creates a poverty trap that is almost impossible to escape, and contributes to higher greenhouse gas emissions that worsen climate change.

In June 2011, the Global Sustainable Electricity Partnership together with UN-Energy published a report of recommendations to strengthen public-private partnerships (PPP) that support and promote the global deployment of low-carbon and zero-emitting electricity technologies.

The current report builds upon the findings of the previous edition. A second survey of practitioners from the private, public and civil society sectors was conducted to identify policy and project characteristics necessary to create an attractive environment where partnerships can be effective and successful in bringing projects to fruition. With this expanded dataset and analysis, the recommendations of the first report are reviewed and complemented with new information.

Furthermore, survey participants identified what kind of support they need to build successful public-private partnerships. The sharing of knowledge on best practices, help with human capacity building, support in finding and securing financing, help with bringing different parties together and support to develop, deploy and manage demonstration projects were acknowledged as the areas where help was most needed. The Global Sustainable Electricity Partnership (the Partnership in short), by implementing small sustainable power projects and conducting human capacity-building workshops, is constantly engaging in collaborations with local stakeholders from the public sector and civil society. The Partnership is ready to continue playing an active role in global electricity issues and make its contribution to strengthening partnerships between public and private stakeholders in order to accelerate the deployment of sustainable electricity technology and increase the access to electricity.

SUMMARY OF RECOMMENDATIONS FOR STRENGTHENING PUBLIC-PRIVATE PARTNERSHIPS

Supporting Policies for Public-Private Partnerships

1. & 2. Recommendations on policy elements to promote the deployment of low-carbon and zero-emitting technologies and on mechanisms to establish policies that promote public-private partnerships

Establish a formal national energy development plan with a strong and stable legislative framework and a clearly defined PPP strategy. Moreover, provide assured cost recovery and profit potential for investors by creating national energy plans backed by legislation and regulation that establish a commitment to the promotion of low-carbon and zero-emitting technologies.

3. Recommendation on policy options that best support public-private partnership in research, development, demonstration and deployment of projects

Provide stable, sufficient funding for research, development, demonstration and deployment (RDD&D) of a wide range of emerging clean electricity technologies. As RDD&D may be very capital intensive, especially for the deployment phase, PPPs will have to change the way RDD&D is financed in order to lead the way to decarbonizing electricity supply.

1. See International Energy Agency: *World Energy Outlook 2011*, Paris 2011, p. 472

2. See International Energy Agency: *World Energy Outlook 2011*, Paris 2011, p. 477

Defining effective public-private partnerships

4. Recommendation on the benefits of strong public-private partnerships for electricity technology deployment

Maximize the benefits brought to communities from new and expanded electrification that is sustainable and environmentally conscious. These PPPs can help raise standards of living and support the economic and social development of communities through improved access to electricity.

5. Recommendation on private sector's contributions to strong partnerships

Optimize the private sector's ability to use resources effectively, adopt many financing alternatives for electricity projects and design, construct, and operate them.

6. Recommendation on the public sector's contributions to strong partnerships

Set electricity development goals and timetables for long-term technology deployment programs under national energy plans. One of the key strengths of the public sector is the ability to develop long-term, low-risk policies that can entice financial contributors and project developers to invest in a project, taking into account the particular needs and potentials of a specific region.

7. Recommendation on the factors contributing to effective partnerships

Sustain strong partnerships with effective communication, well-defined roles and responsibilities, and continuous commitment. Effective partnerships keep expectations from all parties constantly in check.

Financing

8. Recommendation on financing for promoting and deploying efficient low-carbon and zero-emitting technologies and infrastructure expansion

Minimize the private sector's risk by using Power Purchase Agreements (PPA) to provide the greatest certainty for recovery of long-term investment and create favourable conditions for profit.

Introduction

CHALLENGES

Sustainable development is one of the most pressing priorities countries face today. There is pressure to take economic, social and environmental goals into consideration, and combine them into a single strategy that ensures present and future generations reap the benefits from economic growth. Energy is central to this equation, and when used properly, can help attain the anti-poverty targets known as the *Millennium Development Goals* (MDGs), while also fighting climate change and protecting the environment. However, access to energy still remains a major concern for many countries.

Low-carbon and zero-emitting electricity is critical for achieving simultaneously significant economic growth, as well as improvement of social conditions and emissions reduction. To achieve electricity sustainability, power sources must be more efficient and produce lower carbon emissions. Moreover, infrastructure has to be considerably extended so that the benefits of sustainable energy reach those most in need. This underpins the importance of the initiative led by United Nations Secretary-General Ban Ki-moon on *Sustainable Energy for All*,³ which aims to ensure universal access to modern energy services, improve efficiency and increase use of renewable sources.

There is an urgent need to scale up access to energy—and particularly sustainable electricity. However, the task seems daunting. For example, the IEA calculates the costs of reaching universal access to electricity at US\$ 915 billion overall or almost US\$ 46 billion per year until 2030. In *New Policies scenario*, where no additional policies for universal energy access are implemented, the IEA notes that in some regions even more people might be without energy access in 2030 than today, mostly due

3. See Secretary-General's High-Level Group on Sustainable Energy for All: *Sustainable Energy for All – a Framework for Action*, New York 2012, p.6-10.



Baygorria Hydropower plant, Uruguay

Source: Ing. Oscar Ferreiro

to population growth.⁴ Given these challenges, it seems clear that cooperation among all stakeholders will be necessary, as neither the public nor the private sector nor civil society can ensure this alone.

CASE FOR PUBLIC-PRIVATE PARTNERSHIPS

Effective public-private partnerships are critical to addressing universal access to energy services and to achieving sustainable energy development. The Global Sustainable Electricity Partnership understood this early on. Since its inception 20 years ago the Partnership—under its former names of e_7 and e_8 —has been partnering with developing-country governments, local utilities and development banks and agencies to promote access to sustainable electricity technologies by implementing small sustainable power projects for demonstration and conducting human capacity-building workshops. Partnerships with local stakeholders from the public sector and civil society were essential for the organization's past accomplishments.

The United Nations also acknowledged the importance of strong public-private partnerships and introduced the possibility for private sector involvement in the achievement of MDGs through cooperative

arrangements at the World Summit on Sustainable Development in Johannesburg in 2002. Also, most development banks and agencies endorse PPPs as development tools in threshold and developing countries. For instance, the World Bank acknowledges the potential of PPPs to take full advantage of benefits for development through public and private cooperation.

Considering the challenges of universal energy access and critical deployment of sustainable energy technologies, the Partnership and UN-Energy feel strongly that PPPs are a critical component of success. No single stakeholder group will be able to reach these ambitious goals on its own. That is why we consider that collaborations between public, private and civil society stakeholders are an indispensable instrument of cooperation.

STRENGTHENING PUBLIC-PRIVATE PARTNERSHIPS INITIATIVE

Taking into account the major challenges that lie ahead in increasing access to energy and the need for strong cooperative associations to achieve success, the Partnership together with UN-Energy launched their *Strengthening Public-Private-Partnerships* initiative in 2010. Part of this effort was to conduct a global survey with the purpose of identifying policy and project characteristics necessary to create an attractive environment where collaborations can be effective and bring projects to fruition.

4. See International Energy Agency: *World Energy Outlook 2011*, Paris 2011, pp. 478, 482, 487.

The results of the survey were published in a joint report by the Partnership and UN-Energy and discussed comprehensively during the *Global Summit on Strengthening Public-Private Partnerships* held at the UN Head Office in June 2011. There, the Partnership and UN-Energy successfully presented effective and meaningful collaborative projects that support, as well as promote the global deployment of low-carbon and zero-emitting electricity technologies. Moreover, it recommended the best enabling public policies in an attractive financial risk-reward atmosphere created by successful PPPs. The recommendations issued were a central element of the initiative to support countries in making significant progress toward global electricity access.

The current report builds upon the findings of the previous edition. At the same time it aims at reviewing and —if needed— complementing the recommendations and proposed actions of the last survey report. This is done by expanding the survey's dataset and restructuring the analysis to consider each of the relevant stakeholder groups.

One of the difficulties when discussing partnerships with private involvement and PPPs in particular is that no clear definition or concept exists. In fact, very different PPP concepts and options are used simultaneously, depending on the purpose of the collaboration, the participating stakeholders and the sector where the collaboration is implemented. As a rule, partnership options can all be situated along a wide range starting from a public entity without any private involvement to outright privatization. For example, common PPP options could be —in order of increasing private involvement— supply agreements, management agreements, leases and concession agreements, among others.⁵ Moreover, PPPs can be both profit-oriented and not-for-profit. Regardless of the shape the partnership takes, all options can be effective in successfully executing projects.

For our survey and both editions of the report, the Partnership and UN-Energy opted to use a general concept of PPP. In the context of universal energy access and sustainable electricity technology deployment, a public-private partnership was defined as “a specific arrangement between one (or more) public entities and one (or more) private entities to complete a given project.”⁶

5. See United Nations Economic and Social Commission for Asia and the Pacific: *A Legal Perspective of Public Private Partnerships*, 2003, p 14.

6. See the Report of the G-SEP and UN-Energy: *Strengthening Public-Private Partnerships to Accelerate Global Electricity Technology Deployment. Recommendations from the Global Sustainable Electricity Survey*, 2011, p 6.

Analysis of Survey Results

DATASET AND STRUCTURE OF THE REPORT

The first phase of the global survey was conducted from December 2010 to February 2011 and respondents were mostly from the private and industry sector. Consequently, the report and the recommendations primarily represented this sector, although others also participated in the survey. In order to strengthen the perspectives of the other relevant stakeholder groups, new data was collected from November 2011 to January 2012. This time, the survey targeted principally the public side as well as development banks and agencies. To guarantee the comparability of new and old data and the blending of both into a new dataset, the same questionnaire was used both times. In this way, the dataset could be expanded taking into account all stakeholder groups relevant for PPPs: public and private stakeholders as well as development banks and agencies. Altogether, 119 respondents participated in the survey and completed the questionnaire.

Forty respondents were categorized as being from the public sector. This group is for the most part made up of ministries in charge of electricity from UN member states that are not part of the Organization for Economic Co-operation and Development. Regionally, the respondents from the public side hail from all over the world, with 33% coming from Africa, 31% from the Americas, 21% from Europe and 13% from Asia and Oceania. Although ministries made up the biggest sub-category in this stakeholder group, others identified themselves as, for example, energy sector regulators. Public utilities were not considered in this group, unless they were completely dependent upon the ministry in charge.

The group of private sector respondents is primarily composed of industry stakeholders such as electricity providers, manufacturers or vendors, among others. The different companies are predominantly privately owned. However, public companies (mostly public utilities) were also incorporated into this group whenever they were legally and operationally independent from the government. Altogether, this stakeholder group is made up of 52 survey participants.

The third group is dominated by development banks and agencies. While big multinational institutions like the World Bank, the Asian Development Bank or the Inter-American Development Bank account for the biggest share of this group, smaller national or regional institutions also took part in the survey, as well as other financial institutions. Although they only make up a small fraction of this group's respondents, United Nations agencies, non-governmental organizations, think-tanks and other civil-society stakeholders were also pooled in this third category, overall comprising 27 respondents.

SURVEY RESPONDENTS BY STAKEHOLDER GROUP	
Group	Number of Respondents
Public Sector	40
Private Sector	52
Development bank or agency and Financial organization	27
Total	119

The following sections will analyze the responses of each stakeholder group independently from the others. In a first step, the aim is to understand the preferences, interests and expectations of each of the three relevant stakeholder groups. In a second step, this report will compare the main positions of each stakeholder group with the others in order to identify where preferences, interests and expectations overlap and where they differ, thereby hopefully revealing potentials for greater cooperation as well as areas for improvement. Finally, the report will take a closer look at the recommendations identified in the previous survey report from 2011. As the recommendations were elaborated on the basis of a private stakeholder dominated dataset, the current report will check whether they still apply or possibly need to be amended.

The Global Sustainable Electricity Partnership and UN-Energy believe that PPPs can be a very efficient instrument, if they are implemented in the right way and in the right environment. With this report we hope to contribute to improve the implementation of collaborations by employing a best practices approach. The Partnership, as a stakeholder in its own right, is also actively engaged in PPPs and has been closely cooperating with other stakeholders from the public side and from development banks and agencies for twenty years. Consequently, we are always looking at ways to further develop cooperation with our partners and to improve our contribution. With this in mind, the last part of the report will explore what kind of support stakeholders need to achieve effective PPPs.

ANALYSIS OF THE DATA FOR THE PUBLIC-SIDE STAKEHOLDERS

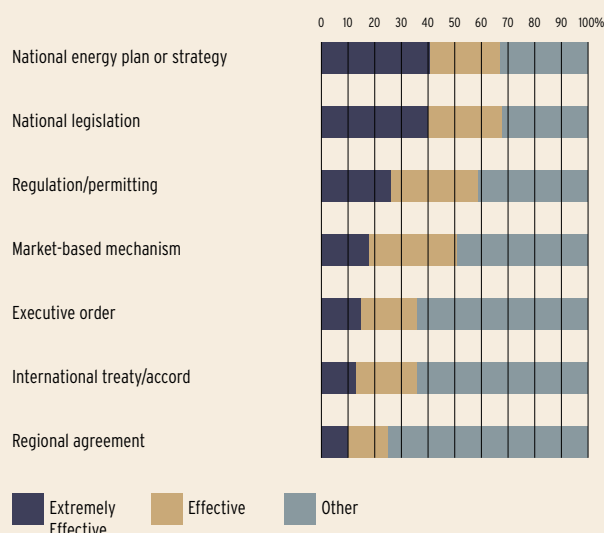
Supporting policies

Developing or upgrading the energy system of a country is always a long-term undertaking. Regardless of the specific purposes behind it—such as increasing supply security, expanding energy access to underserved regions or reducing overall carbon intensity—such endeavours usually take years if not decades.

That is why the right policies need to accompany such a process if it is to be successful. As the main actors when it comes to policy formulation and implementation, governments and other public stakeholders are able to set policy parameters and influence outcomes like no other entity. Thus, the policy interests and preferences of this stakeholder group can be considered crucial.

Depending on the country and on the existing political system, different means or mechanisms are possible to establish the right policies for effective PPPs. A clear majority of 67% of the respondents deemed effective the implementation of a national energy plan or strategy. In fact, more than 95% answered that they already have implemented some kind of National Energy Strategy that includes renewable energy technologies. Of those who did have a national energy strategy, two thirds stated that the strategy described a clear role for PPPs.

EFFECTIVE WAYS ENERGY POLICIES CAN BE ESTABLISHED



The proportion of respondents favouring national legislation as a mechanism was slightly higher. Moreover, national legislation also has the strongest backing overall, since a plurality of respondents (over 41%) regarded it as extremely effective in order to establish a set of rules under which PPPs can successfully promote low-carbon and zero-emitting technologies and expand infrastructure to unserved or underserved populations. On the other hand, more than two thirds of respondents did not show a preference for using executive orders to establish effective policies.

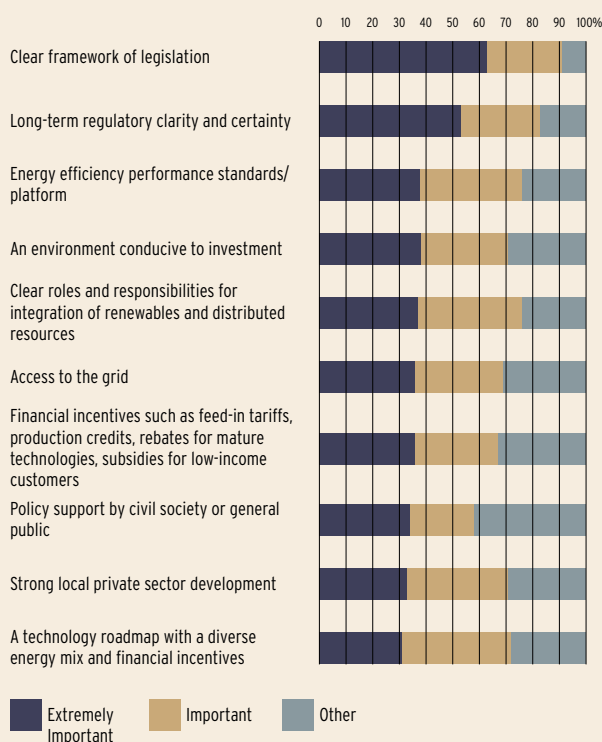
Regarding the effectiveness of market-based mechanisms to establish a positive environment for PPPs, the respondents were split. Virtually half of them strongly backed these types of mechanisms, while the other half did not believe them to be a particularly effective method. However, it should be noted that a large percentage of respondents did not reject market-based mechanisms outright, but were not sure about their effectiveness.

The strong support for national mechanisms, and for national legislation in particular, may be traced to the fact that they are regarded as easier to set up than international treaties and are geared to the needs of the specific country. Moreover, national legislation is possibly more lasting than other kinds of national rules. Given the long timeframe of an endeavour like the electrification of a country, this may be a reason for the strong backing of national legislation among public stakeholders.

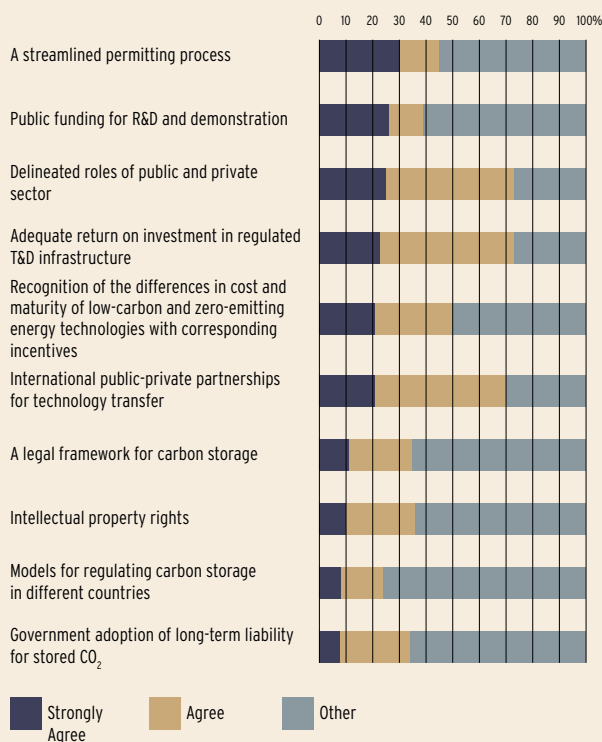
While the ways and mechanisms of implementing a policy supportive of effective PPPs clearly appear important, policies primarily need to address the right issues to be successful. That is why the survey's participants were asked to identify the important policy elements that are needed to foster successful PPPs in order to promote low-carbon and zero-emitting technologies and energy efficiency measures.

Public stakeholder respondents did show two clear preferences that seem consistent with the previously shown priorities. Once again, acknowledging the long-term nature of transforming an energy system, 83% of respondents stressed the importance of long-term regulatory clarity and certainty. An even higher percentage thought that a clear framework of legislation was an element to be considered in successful policies, with more than 63% among them stating this element to be extremely important.

POLICY ELEMENTS THAT PROMOTE LOW-CARBON AND ZERO-EMITTING TECHNOLOGY AND ENERGY EFFICIENCY



OTHER POLICY ELEMENTS THAT PROMOTE LOW-CARBON AND ZERO-EMITTING TECHNOLOGY AND ENERGY EFFICIENCY



These results clearly highlight the importance attributed to the issues of transparency and predictability of the legal framework and of legal decisions. When embarking on a long-term endeavour as challenging and demanding as expanding energy access or decarbonizing the energy system, these two elements are paramount. Without them it is not possible to implement a coherent technology plan and the corresponding technologies, as the latter are quite often designed to operate for decades. Moreover, transparency and predictability are prerequisites to successfully attracting adequate investment.

Regarding the contribution of the private sector, however, public stakeholders recognize that just attracting private investment is not enough to ensure success. For this reason, they ask for further policy elements to organize the relations between the public and private sectors. The most important element in this context is to agree on a clear set of rules, delineating roles and responsibilities on each side. This helps to ensure proper commitment from those involved and maintain expectations on a realistic level—ensuring long-term cooperation. Close to three quarters of respondents regarded this issue as a central element for the formulation of a successful policy.

Moreover, the public sector acknowledges the profit-seeking orientation of its private counterpart. On that account the respondents clearly seek to incorporate elements that foster an environment conducive to investments and give an adequate return on the invested capital, with over 70% of respondents identifying both issues as important or extremely important.

Regarding the more technical elements that are deemed to be important for a successful policy, some interesting aspects arise from the survey's results. For example, more than 77% of respondents from this stakeholder group rated the establishment of energy efficiency standards as being especially critical, making this policy element the third most important element for a successful policy. Furthermore, 72% of public stakeholders endorsed the inclusion of a technology roadmap with a diverse energy mix, as well as international PPPs for technology transfer. Moreover, they agreed that elements arranging access to the grid were highly relevant.

On the ground: policies in place

As stated previously, the overwhelming majority of respondents from the public side declared they had already implemented some kind of national energy strategy or energy policy that considers the role of renewable energy technologies and PPPs. However, the implemented policies are very different in scope and reach.

Almost all policies share a long-term vision. They incorporate a clear framework that encompasses elements regarding power generation and grid expansion. Most participants stressed that clarity and reliability are key qualities an effective policy or regulatory regime should have. Accordingly, almost all of these plans or policies set some kind of binding and non-binding targets.

Regarding renewable power generation, targets typically must be reached by a specific year, and sometimes these targets are complemented by other targets, such as energy-efficiency achievements. The Strategic Action Plan for the implementation of the Republic of Palau's National Energy Strategy, for example, sets as a target a 20% share of renewable energy and energy efficiency gains of 30% by 2020.

Although they have different names depending on the country (e.g., Green-Tariffs in Ukraine), many rely on subsidized feed-in-tariffs or rising quotas to promote the deployment of sustainable power technologies in order to reach the targets set in their plans and strategies. These feed-in-tariffs are, as in Nigeria, often incorporated in multi-year tariff orders to give a higher degree of security for investments. Other countries, however, do not set special rules for renewables at all. They apply the same rules for renewables and for conventional power technologies, so that all technologies compete with one another on a level playing field. The Colombian rules, for instance, reward first and foremost the reliability of a source of electricity, irrespective of the generation technology.

Sometimes, the deployment of specific technologies and the expansion of electricity grids are deliberately advanced for political reasons outside of the energy realm. This is often the case for small and decentralized technologies, which are perceived by some to contribute to a "democratization" of power supply.

One very important policy element concerns the electrification of underserved regions to combat energy poverty. Many countries have set plans for the expansion of distribution networks, especially in rural areas. In isolated off-grid regions, sometimes off- or mini-grid solutions are encouraged and supported.

In addition, many policies presented in the survey take into account the important role of cooperation between public and private entities in general and of PPPs in particular. For example, countries like Croatia, Moldova or Uruguay have set up specific laws to enable PPPs in recent years. Depending on the country and on the definition of what a PPP is—which can vary greatly—PPPs are encouraged for many purposes across different sectors.

Taking a broad definition of PPPs, such as the one we used in this survey, that defines PPPs as any type of specific arrangement between public and private entities to complete a given project, survey respondents mentioned different possibilities for private engagement in the electricity sectors of their countries. For example, it is common to permit private participation in the electricity sector on an EPC (Engineering, Procurement and Construction) basis. This is the case in Ethiopia, for instance. Moreover, cooperation is sometimes extended by including leasing schemes subsequently, similar to the wind projects currently being implemented in Uruguay (see Uruguay Wind Project, Case Study).

As in Djibouti or Egypt, the most common engagement of private stakeholders in the power sector is as Independent Power Producers (IPPs). They sell generated electricity to the (public) grid operator mostly on the basis of Power Purchase Agreements, less often on basis of feed-in-tariffs. This is especially the case the larger the scale of power production. Although the specific arrangements of PPAs vary widely depending of the country, the most common arrangement is awarding contracts by competitive bidding (e.g., Egypt, Peru).

While survey participants deemed regional agreements to be less efficient when asked to name the best ways to establish the right policies for effective PPPs, some public stakeholders did regard regional cooperation with other public and private entities as useful, if only in the area of scientific research and human capacity building. Training and capacity-building programs to develop skills in the field of renewable energies and energy efficiency were identified as an important element in many national energy plans and strategies. The Latin American Geothermal Energy Training Centre in El Salvador (where the National Energy Council and the University of El Salvador work together with La Geo, a company from the private sector), can serve as an example for a successful cooperation between public and private entities in this area.

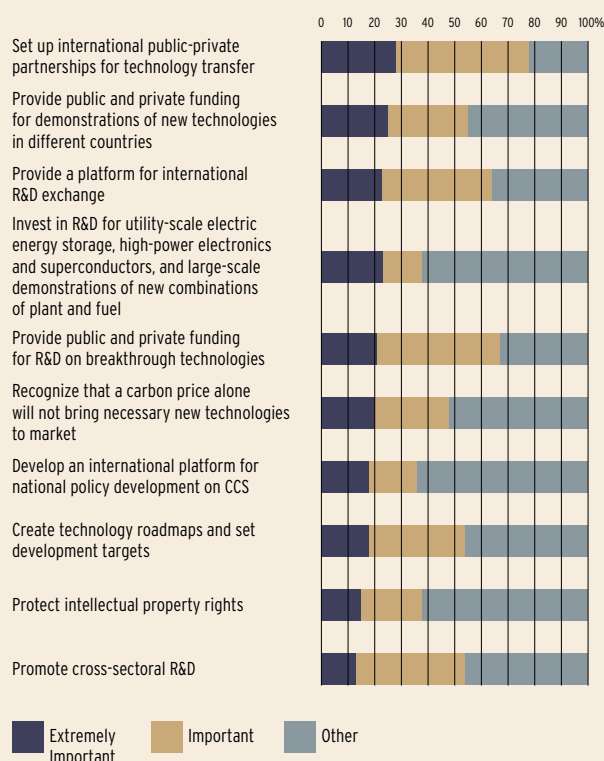
Even the full privatization of public energy companies was mentioned as a cooperation possibility by one survey participant.

Importance of policy options that best support PPPs in research, development, demonstration and deployment

Because of the importance of the research, development and deployment of new technologies for the future energy supply system, participants were asked which policy options best supported PPPs in research, development, demonstration and deployment (RDD&D) of projects across a wide range of promising emerging clean energy technologies.

A clear majority again came out in favour of international PPPs for technology transfer. This time the percentage of supporters even surpassed the already strong support shown previously when participants were asked to indicate elements of success of a PPP policy in general, reaching 78%. The preference for international cooperation is especially strong, as close to two thirds of respondents indicated the need to have an international platform for RDD&D exchange to support PPPs in this area.

DEFINING EFFECTIVE PUBLIC-PRIVATE PARTNERSHIPS IN RESEARCH, DEVELOPMENT, DEMONSTRATION AND DEPLOYMENT OF PROJECTS



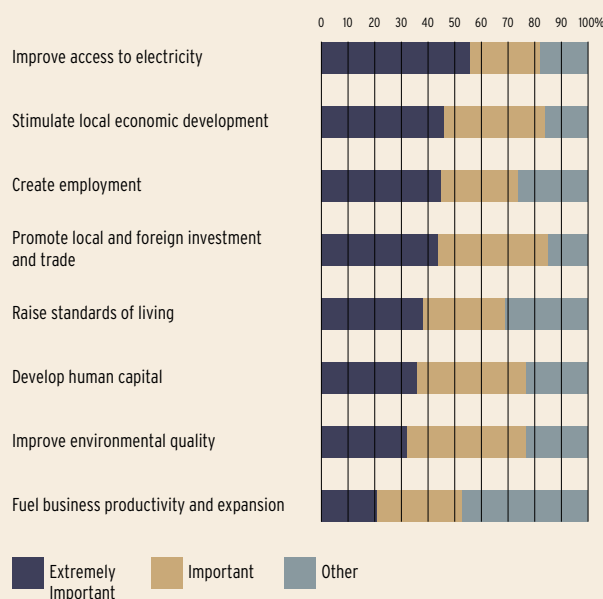
As in the past report, a large majority of respondents agreed that one of the best ways PPPs can support RDD&D of projects is to provide a stable and effective source of funding. At the same time, however, support for intellectual property rights issues was very low: only one third of public stakeholders regarded them as a priority for a successful policy supporting PPPs in RDD&D.

Other policy options that were strongly supported by a majority of public stakeholders were the promotion of cross-sectoral RDD&D and creation of roadmaps and setting of development targets to support effective PPPs.

Benefits produced by strong public-private partnerships

Cooperation between public and private stakeholders in public-private partnerships offers both sides important benefits. However, both stakeholder groups can have quite divergent interests and motivations for joining forces in a sustainable electricity PPP project. Rating the importance of the expected benefits that arise from this cooperation can help us understand what motives and expectations predominate in each stakeholder group, a precondition for finding the right parameters for cooperation and creating win-win situations.

BENEFITS OF PUBLIC-PRIVATE PARTNERSHIPS FOR ELECTRIC TECHNOLOGY ADVANCEMENT



Both stimulating local economic development and promoting local and foreign investment and trade were named by an overwhelming majority of respondents as the most important benefits public stakeholders look for when entering a PPP. While fuelling business productivity and expansion was rated the lowest, over half of the respondents considered it to be an important or extremely important benefit from PPPs.

Close behind were improvements in access to electricity. Almost 83% of respondents expressed a strong preference for this issue, with even 56% rating it as the most important benefit in a sustainable electricity public-private partnership project—more than any other potential benefit. The nexus between increasing access to energy and higher social and economic development is proven and well documented. Improvements in access to energy and especially electricity reinforce the two top-rated priorities: the stimulation of economic development and the promotion of investment. As investments pour in and businesses grow, new jobs are created along the way.

Eradicating energy poverty and creating employment for the local population is also linked to raising standards of living—another top priority for over two thirds of respondents. Another benefit that public stakeholders hope for—and that is closely related to job creation—is the development of human capital. This benefit also emerged as a priority, as just over 75% stressed the importance of this benefit. In fact, reducing energy poverty may lead to a cycle of sustainable economic growth and social progress, as expanding business bolsters social development and a higher-qualified workforce attracts more business to the region.

Last but not least, environmental improvements were named as a top priority by more than three-quarters of respondents. Access to cleaner electricity can stimulate economic development and improve quality of life, and a large proportion of respondents agreed that improvements in environmental quality may also be a benefit from public-private partnerships in the context of sustainable and renewable energy.

Other potential benefits of PPPs that were named by public stakeholders are, for example:

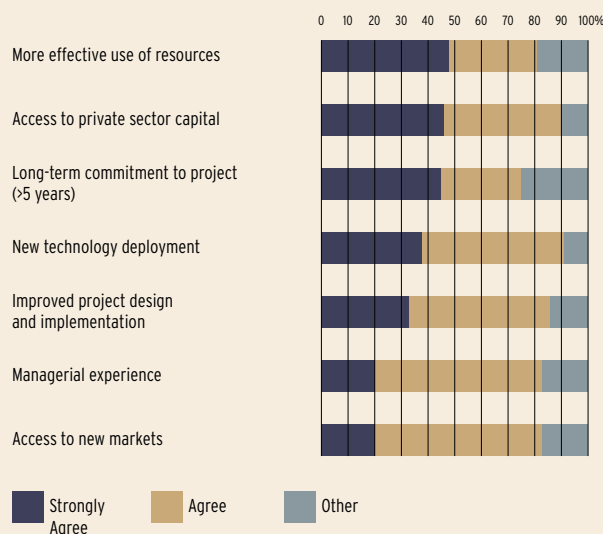
- Fostering strong partnerships between the government, the business and industry sectors, and academia
- Creating awareness of efficient use of energy resources

Contribution of the private sector to strong partnerships

Working together in a successful partnership is not only a matter of finding common interests or goals and recognizing a potential win-win situation. For a partnership to be successful, it is also a question of defining clear roles and keeping expectations in check. In this sense, it can be extremely important for the success of a partnership if each side understands the other's expectations before embarking in a joint project.

We asked the public side to rate the kind of contribution it expects from the private sector to strengthen PPPs.

LEVEL OF AGREEMENT WITH WAYS THE PRIVATE SECTOR CAN CONTRIBUTE TO THE STRONGEST PARTNERSHIPS FOR ELECTRICITY TECHNOLOGY DEPLOYMENT



All possible contributions the private sector could make to strengthen PPPs were highly rated, with every issue being accepted as an important contribution by more than 75% of respondents. Overall, 80% of respondents rated the more effective use of resources as being an important contribution. Furthermore, close to half of these respondents even agreed this issue was the strongest contribution of the private sector to a PPP.

Even when stakeholders agree on every level and a project is identified as a clear win-win situation, it may be difficult to make the project a success. Many challenges and pitfalls may lie ahead of a joint project from inception to successful completion. This is especially true for the financing of projects in capital intensive sectors like electricity, and could explain why 90% of respondents agreed on the importance of having access to capital from the private side. Moreover, this possible contribution ranks very high on the public sector's priority list, as 46% gave it the highest possible rating.

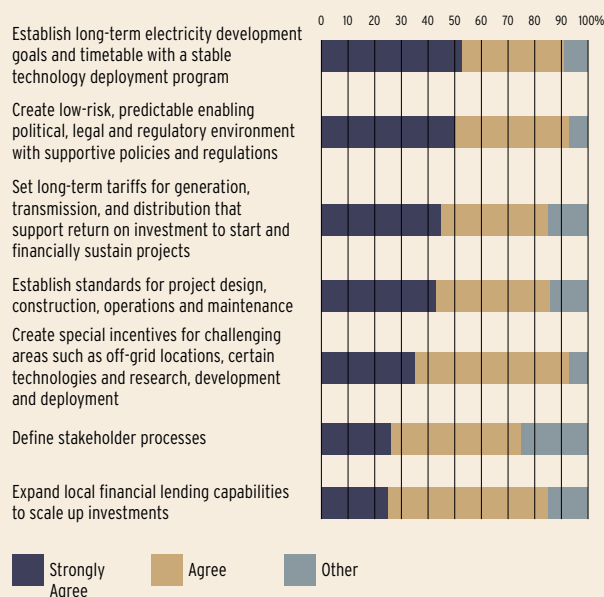
However, access to capital and efficient resource allocation are not enough for a project to succeed. Respondents from the public side understand that a partnership has to continue, even after a project has gone into operation. Again, this applies especially to the field of energy, as it is shaped by long-term decisions, and hence requires long-term commitments. In fact, public stakeholders expect that the private sector commits itself long-term when partnering in PPPs: almost 76% agreed that this was an important contribution of the private sector to a strong PPP.

What is more, 45% of these respondents strongly agreed that having a long-term commitment from the private sector was a key factor in a strong partnership.

Contribution of the public sector to strong partnerships

Public stakeholders have a clear expectation of what contributions they expect from their private partners. They are also very aware of the fact that a partnership is not a one way street, and both sides have to make substantial contributions for a joint venture to be lasting and successful. When asked about their own contributions to strong partnerships, respondents once again consistently agreed on the importance of all possible contribution-options offered in the survey.

LEVEL OF AGREEMENT WITH WAYS THE PUBLIC SECTOR CAN CONTRIBUTE TO THE STRONGEST PARTNERSHIPS FOR ELECTRICITY TECHNOLOGY DEPLOYMENT



Public stakeholders see their primary contribution as establishing stable and long-term frameworks to offer an appropriate environment for the private partners. For example, half rated creating a low-risk and predictable political, legal and regulatory environment with supportive policies and regulations as a top contribution of public stakeholders to a strong partnership. In the same way, they see the establishment of long-term electricity development goals as one of their core contributions.

Public stakeholders also understand that some projects in their countries may be difficult to finance, and hence agree that measures sometimes have to be taken to start and financially sustain projects. That is why 85% of respondents in this stakeholder group agreed on setting long-term tariffs for generation, transmission and distribution to support return on investment. Furthermore, close to half of them even rank it as their top contribution to a strong partnership.

One of the recurring issues that public respondents thought important was something that might be labelled “local knowledge.” Public stakeholders have extensive and unique information about the local situation and are especially aware of the needs and potentials “on-site.” Moreover, they are also the ones charged with framing the policies to address those needs and exploit the potentials for their populations’ benefit. That is why public stakeholders are able to create special tailor-made incentives for challenging areas, such as isolated rural areas. Almost 93% of respondents agreed that this was one of the most important contributions of the public sector to effective and successful partnerships, with a plurality of stakeholders giving this issue the highest rating of agreement. This information advantage makes public stakeholders key contributors for successful projects.

What contributes to ineffective partnerships?

Sometimes, partnerships fail to live up to the high expectations placed in them. The reasons for this may be manifold, and may have different consequences. Since lessons can be drawn from these experiences, public stakeholders were asked to share their experience regarding ineffective partnerships.

As in the last report, most of the negative experiences that contributed to ineffective partnerships could be traced back to three main categories. Most pitfalls revolved around issues regarding inappropriate policy or legal framework, organizational matters of the partnership itself, and flawed project implementation.

Policies:

In addressing issues regarding inadequate policy and regulation, most of the public respondents identified lengthy and complicated permitting processes and procedures, as well as unclear or changing rules as one of the main causes for failing partnerships. They stressed the lack of an adequate legal framework and sprawling bureaucracy as barriers for business, thus making successful PPPs more difficult.

But respondents cited more than problems regarding the legal and regulatory environment: they also pointed to unpredictable policy environment and political instability. They emphasized the negative impact of deficiencies in transparency, good governance and public accountability on the success of partnerships. Some of the respondents straightforwardly spoke of the problem of corruption as one of the greatest inhibitors to implementing any project.

Partnerships:

Public stakeholders also identified possible pitfalls that related to the organization or setting up of the partnership itself. Two recurring issues seemed to emerge. On the one hand, the issue of diverging interests among the partners was brought up. On the other hand, unreasonable expectations on both sides can lead to inefficiencies, and potentially to failure.

Regarding the former issue —diverging interests— many respondents raised the fundamental difference between public and private partners: while the public side is service-oriented, the private side is predominantly profit-oriented. However, PPPs can very well bridge this divide and offer an added value —when implemented in the right way.

Clear delineation of responsibilities, effective communication between the parties and managing expectations right from the start can help mitigate the risks associated with this issue. In connection with this, respondents also identified the unreliability of partners as an important problem. Poorly structured agreements can result in a misunderstanding among parties as to their obligations or the failure of parties to meet those obligations, resulting in an uncooperative working relationship and, ultimately, threatening the successful completion of the project.

Projects:

When it comes to the implementation of a project, public stakeholders also pointed to some possible pitfalls. In the first place, a project may fail as a consequence of a flawed project design or poor planning. Poor implementation of a project is chiefly traced back to a low standard of knowledge or poorly qualified staff. This is one of the main reasons why respondents identified developing human capital as one of the greatest benefits of strong PPPs.

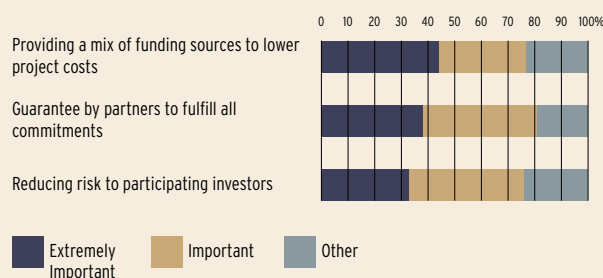
However, a partnership can also fail to be successful, despite having a well-planned project design, strong partners and the right legal framework in place, mainly due to lack of financing. The necessary funds may fail to materialize because of, for example, a poor economic environment. Many public respondents also attributed financing difficulties of specific projects to poor risk perception and management by private parties. But even when funds can be mobilized, public stakeholders indicated that the financing costs—the terms offered to public entities to finance a project—may be too high to make a project viable and a partnership effective.

Role of PPPs in ensuring proper financing

Survey participants acknowledged that PPPs have an added value, especially regarding financing issues. They stated that PPPs succeed in bringing together all relevant stakeholders, which makes finding financing options more likely. This particularly applies to international PPPs as these partnerships seem to be especially effective in facilitating the financing of renewable projects.

Survey respondents explained that PPPs are exceptionally successful in reducing the risks to participating investors—over 75% of respondents were of this opinion. Moreover, public stakeholders agreed that PPPs are able to provide a mix of different funding sources. This not only improves the possibilities of finding an adequate financing scheme for a given project, it also has the potential of substantially lowering project costs. Almost 43% of public-side survey participants rated this as an extremely important role of PPPs. No other role was rated higher.

ROLE OF PUBLIC-PRIVATE PARTNERSHIPS IN ENSURING PROPER FINANCING

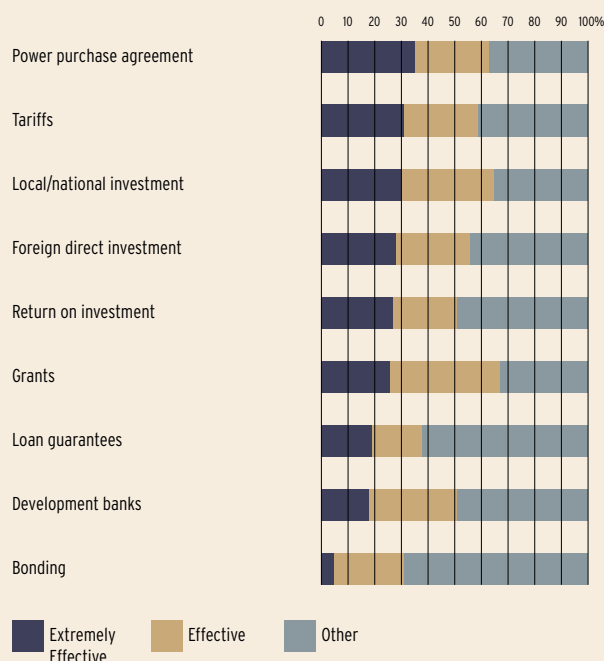


Partnerships help build trust between the parties. This of course is a precondition for any successful long-term cooperation. However, PPPs can do more than that. As an established form of cooperation they can help bring a high degree of legal certainty regarding the roles and commitments among the partners. In fact, over 80% of respondents agreed that PPPs are important, especially because they bind the partners to fulfill all commitments.

Effectiveness of different financing instruments in promoting low-carbon and zero-emitting technologies

Financing can be a make-or-break issue for a partnership. Because of its importance, the survey asked participants to rate the effectiveness of different financing instruments.

EFFECTIVENESS IN PROMOTING LOW-CARBON AND ZERO-EMITTING TECHNOLOGIES, INFRASTRUCTURE EXPANSION (TRANSMISSION, DISTRIBUTION, STORAGE) AND THE DEPLOYMENT OF EFFICIENT TECHNOLOGIES



Overall, most of the financing instruments were rated as effective. However, grants, local and national investment and PPAs received the strongest support. Two thirds of respondents rated these instruments as especially effective for financing partnerships to promote low-carbon and zero-emitting technologies. More than a third of respondents believed PPAs to be extremely effective. No other instrument received a higher rating.

Other financing instruments whose effectiveness was acknowledged by respondents were tariffs and foreign direct investment. Both had the support of more than half of responses, with close to 30% of respondents rating them extremely effective.



Zafarana Wind and Solar Project, Egypt

Source: KfW Bankengruppe

One of the best ways to find financing partners for a given project is to increase the possibility of having returns on investments. Just over one half of public respondents agreed with this, and nearly one third rated return on investment as one of the most effective ways to finance projects in a PPP.

Development banks were not rated as especially effective in financing projects and partnerships by a majority of public stakeholders—only 41% were supportive of financing through development banks. This seems somewhat contradictory, as a large proportion of financing instruments that are considered very attractive by public-side stakeholders—such as (soft) loans—are offered by development banks and agencies.

Nonetheless, only two financing instruments received a lower rating than development banks. While not even 40% rated loan guarantees as particularly effective at promoting low-carbon projects, only slightly more than 25% said the same regarding bonding. However, it should be noted that 20% of respondents were not sure about the effectiveness of bonding or did not know exactly how this financing instrument works and the benefits it offers.

Some participants indicated that although PPAs might be attractive as a way of financing renewable projects, they are not available in all countries and jurisdictions. In Colombia, for example, where the market is fully liberalized and different power sources freely compete with each other, PPAs—as well as feed-in-tariffs and loan guarantees—are not allowed.

Other survey participants chose the option of financing renewable projects through different carbon mechanisms. Most prevalent were carbon credits in the context of the Clean Development Mechanism (CDM). However, some respondents also hinted at the possibility of emissions trading, as in the European Union Emissions Trading Scheme (EU-ETS), as a way of funding renewable energy projects.



ENHANCING ELECTRICITY ACCESS IN NIGERIA

Prof. Dr. A. S. Sambo

Director-General, Energy Commission of Nigeria

Energy adequacy and economic development are closely linked, since energy is required for every productive activity. The very poor energy situation in Nigeria today can be addressed by the full implementation of the National Energy Policy (NEP), which articulates the production and adequate supply of a balanced mix of energy in a reliable, cost effective and environmentally friendly manner for the nation's economic growth and development.

Electricity, being the most convenient form of energy, has a major impact on the nation's socio-economic life. Its adequate and sustainable supply is a prerequisite for industrial growth and socio-economic progress of any nation. In Nigeria, generation has not been more than 4,000 MW since the 1980s and only 50% of the country's population of 152 million has access to power. Furthermore, supply is erratic, with electricity available on average for six hours per day, and the quality of this power is poor. Power supply has been inadequate to sustain reasonable growth in the manufacturing, commercial, domestic and services sectors of the economy.

The Nigerian power sector is open to private partners and offers multiple possibilities for a substantial cooperation between public and private stakeholders. Nigeria is well endowed with large quantities of conventional fossil resources, but is also rich in renewable natural power resources like wind, water, biomass and solar. The power requirements of the country will be adequately met when these energy resources, conventional and renewable, are strategically and sustainably harnessed.

Despite the abundance of energy resources in Nigeria, the reality is a mismatch between the huge energy resources and the availability of final end-use energy (electricity): the country is in short supply of electric power for its development. For instance, while the average electricity consumption per capita in Africa was 563 kWh/capita in 2005, Nigeria's consumption stood at 136 kWh/capita the same year. In comparison, Ghana's consumption was 271 kWh/capita, Kenya's was 144 kWh/capita, Libya's was 3,336 kWh/capita and South Africa's was 4,848 kWh/capita in the same year [International Energy Agency (2007)]. Nigeria's situation has not significantly changed from the 2005 figure.

In March 2005, the Electric Power Sector Reform Act came into being, giving legal backing to the Government's policy to open up the power sector and increase cooperation with the private sector. Consequently, the National Electricity Power Authority (NEPA) was transformed into the Power Holding Company of Nigeria (PHCN) and unbundled into 18 business units; six generation companies, one transmission company and eleven distribution companies. Also, the Nigerian Electricity Regulatory Commission (NERC) was established. So far, NERC has licensed about sixty (60) independent power companies, both producers and distributors, with a total generation capacity of more than 15,000MW.

NERC has enhanced transparency and predictability, producing the Multi Year Tariff Order (MYTO) that adjusts power tariffs periodically, in line with inflation and exchange rate, amongst others, and which allows for reasonable cost recovery by any investor in the power sector. The MYTO was approved by the Federal Executive Council with effect from July 2008. It should be noted that the price of electricity was last adjusted in 1982.

Considering the energy demand and supply projections carried out on a routine basis by the Energy Commission of Nigeria using modern energy modeling tools and based on various economic scenarios, there is a need to ensure that the nation's electricity generation portfolio is based on a technology-open, broad mix. Both large scale and small decentralized renewable power technologies will play a substantial role, as will other low-carbon emitting power technologies, like clean coal. However, efficient energy use and energy conservation techniques are key and must also go along with the required expanded power infrastructure. We are confident that with the proper policies in place, a broad technology mix and cooperation with the private sector we will achieve the required sustainable power development for all people in our nation.

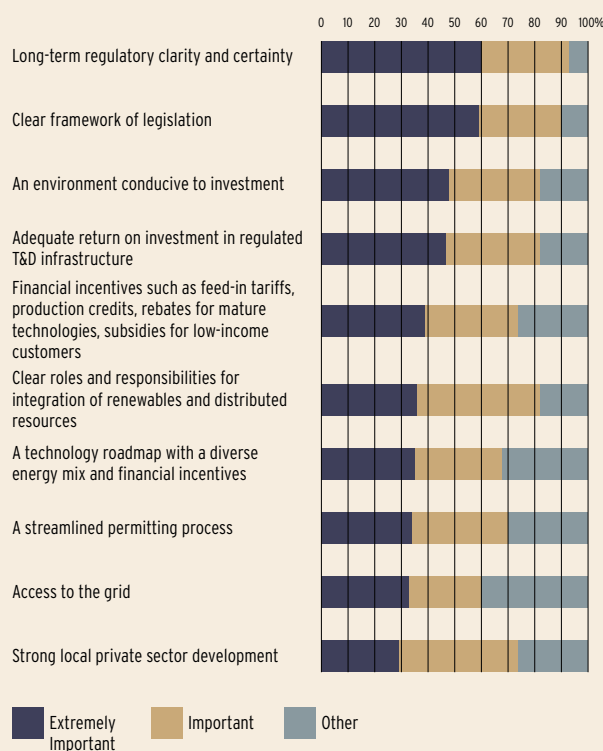
ANALYSIS OF THE DATA FOR THE PRIVATE-SIDE STAKEHOLDERS

For the main part, the first edition of this report in 2011 analyzed the responses for the private and industry sector. However, the old dataset did include the responses of some public stakeholders as well as development banks. Although the analysis did predominantly show the sector's preferences, the data is analyzed again, stripping the private sector data of the influence of the other stakeholder groups.

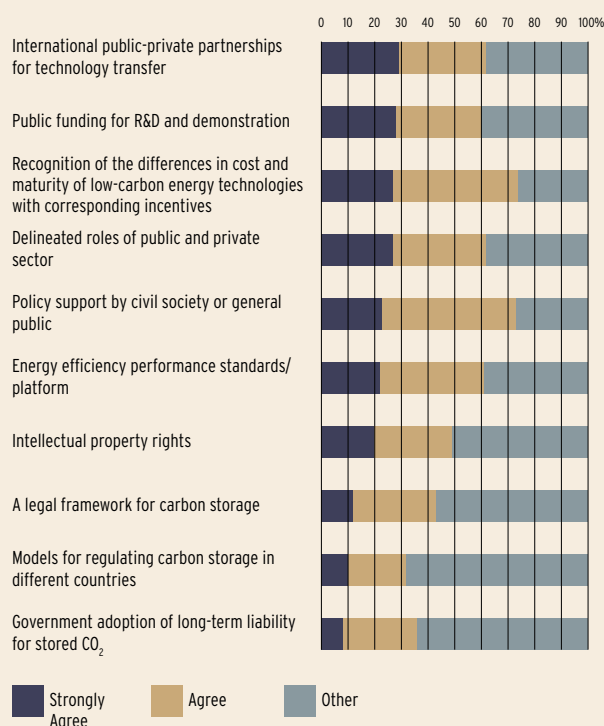
Supporting policies

Stakeholders from this group are for the most part private and public utilities or independent power producers. These companies regularly invest billions of dollars to build or commission their power plants, which usually stay in operation for several decades. Moreover, they also establish close long-term relationships with their suppliers and customers. Something similar of course is also the case for other stakeholders in this group, like manufacturers and vendors, for example.

POLICY ELEMENTS THAT PROMOTE LOW-CARBON AND ZERO-EMITTING TECHNOLOGY AND ENERGY EFFICIENCY



OTHER POLICY ELEMENTS THAT PROMOTE LOW-CARBON AND ZERO-EMITTING TECHNOLOGY AND ENERGY EFFICIENCY



Therefore, predictability is key for this stakeholder group. In fact, respondents overwhelmingly chose long-term regulatory clarity and certainty as the most important policy element. While 93% acknowledged the importance of this element, a clear majority of close to two thirds rated the element as the most important of all; no other element was rated higher. At the same time, private respondents indicated a clear framework of legislation to be particularly important. These results reflect the last survey report: predictability and transparency remain the most important policy priorities for this stakeholder group.

Regardless of whether companies are public or private, they tend to be profit-oriented. This is reflected by the following two priorities respondents chose as particularly important policy elements. Over 82% of private and industry stakeholders rated an adequate return on investment as their number three priority. This seems to be especially important for the grid business (transmission and distribution), as well as other usually highly regulated sectors. Moreover, an overwhelming majority of respondents clearly indicated that, overall, they needed an environment conducive to investment if they were to engage in activities to promote low-carbon and zero-emitting technologies in developing and threshold countries. This is a very similar result to the last survey.

Almost three-quarters of respondents urged the implementation of specific financial incentives like feed-in tariffs, production credits, rebates for mature technologies or subsidies for low-income customers in order to make projects feasible. Approximately 40% of respondents even regarded the latter element as a priority, rating it as an extremely important policy element. It also seems to be important for respondents to put these incentives in the context of a technology roadmap with a diverse and open energy mix.

Frequently, projects require technologies that are tailor-made or at least adapted for a specific social or geographic environment. Often, research and development must be conducted, and sometimes demonstration projects with untested technologies have to be implemented to prove the viability of a future larger-scale project. These activities are especially expensive and risky, which explains why 60% of private sector respondents think that including public funding for research, development and demonstration projects is important. In this context, almost two thirds of private respondents think international PPPs are important elements for technology transfer.

While seeking a return on investment is one of the most important decision criteria for a private company before establishing a partnership and committing to a particular project, other factors also have an enormous impact on this kind of decision. Often, one of the criteria taken into account is the design of the permitting process. Even for relatively simple small- or medium-sized projects that enjoy the approval of all involved parties, red tape can be an obstacle. As it is always necessary to collect a series of permits, licenses and assessments before the start of a project, for the private sector stakeholders it is important to limit the number of contact points to a minimum in order to ensure a transparent process and keep the overall procedure as streamlined as possible. Accordingly, 70% of survey respondents stressed the importance of a streamlined permitting process.

Long and non-transparent permitting processes can significantly delay a project, prolong its required implementation time and, consequently, boost project costs. Different measures such as establishing a single contact authority to serve as a single interface for the project developers, or introducing time limits defining precisely which actions have to take place, can be helpful for putting projects on a fast-track and enabling their realization.

Moreover, when it comes to the right policy for integrating renewable energy technologies and distributed resources into the energy system, the private sector stressed the need for clear roles and responsibilities. The integration of such a policy element is backed by 82% of respondents. This can be interpreted as another variation on the important predictability and transparency theme that the sector already deemed highly important for the legislation framework or the permitting process.

Many stakeholders in the private and industry sector have a lot of experience with infrastructure projects. The industry knows very well that ensuring local support for an infrastructure project can be crucial for the success of the project and the underlying partnership. Almost three quarters of respondents agreed that policy support by civil society and the general public is indispensable. At the same time, this may be a reason why almost 75% of the private sector respondents would encourage the inclusion of policy elements that help develop a strong local private sector as a local partner. Early stakeholder engagement and open, transparent communication are key in gaining vital support for the successful implementation of any kind of sustainable energy project—or any infrastructure project for that matter.

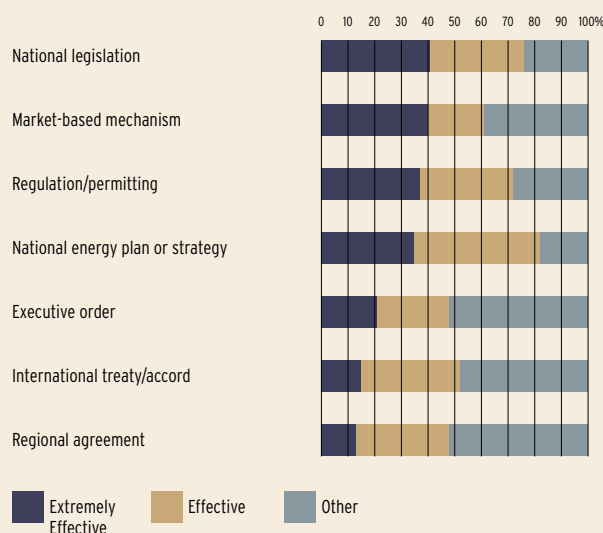
In general, the energy sector regards carbon capture and storage (CCS) technology as a necessary technological intermediate step to lower CO₂ emissions in order to reach full decarbonization in the future and contain global warming. This estimate is shared by other stakeholders, like the IEA,⁷ for example. However, all CCS-related policy elements in the survey received only modest support from private and industry stakeholders or public stakeholders.

One possible explanation for this could be based—as noted in the previous report of 2011—on the coal resources of a particular country. As CCS is mainly discussed with reference to coal power stations, if coal does not play an important role in the electricity production of a country, CCS will not rank high in its priority list. Moreover, CCS is a very expensive technology that only makes sense when implemented in large scale projects. In the context of low-carbon and zero-emitting technologies and universal energy access in threshold and developing nations, respondents may not have considered CCS to be an important policy element—notwithstanding their support for CCS in industrialized countries.

7. See International Energy Agency: *World Energy Outlook 2011*, Paris 2011, p. 179.

Unlike the public sector, private and industry stakeholders are not directly involved in the formulation or adoption of policies. However, they do participate in opinion-making and have an interest in doing so, as they are directly affected by legislation. In this context, survey respondents did express their opinions regarding the effectiveness of different mechanisms to establish energy policies that promote PPPs.

EFFECTIVE WAYS ENERGY POLICIES CAN BE ESTABLISHED



By far the mechanisms with the highest support level among private and industry stakeholders are national energy plans or strategies, national legislation as well as regulation and permitting. These mechanisms were regarded as effective by the great majority of respondents.

Possible reasons for these preferences were outlined in the past report. One of the reasons stakeholders in this group regarded these mechanisms as particularly effective was that it included a requirement for cost recovery and the provision of a clear direction. Moreover, these preferences make it possible for the private and industry sector to actively cooperate with public stakeholders in the development of tailor-made policies. In addition, the last report stated that companies may sense they have more direct influence over the process and can reduce their exposure to regulatory and fiscal risks by engaging legislators and policy makers. This latter argument was also voiced by survey participants, who stated that public relations, public affairs, advocacy and lobbying are effective tools when engaging policymakers who participate in the legislative process.⁸

8. See the Report of the G-SEP and UN-Energy: *Strengthening Public-Private Partnerships to Accelerate Global Electricity Technology Deployment. Recommendations from the Global Sustainable Electricity Survey, 2011*, pp. 9-10.

Although overall support for market based mechanisms was lower than other preferences, more than 40% regarded these mechanisms as extremely effective, almost as much as national legislation. In fact, market-based mechanisms have been implemented in some countries and regions and have been quite successful. However, carbon markets like the European Union Emissions Trading Scheme have failed to gain wide acceptance in some regions. Sometimes, the reason for this is a general mistrust of markets or fear of collapse, as stated in our last report. Yet, another factor could be the necessity to implement these kinds of schemes on an international level in order for them to make real sense and be effective; and international as well as regional agreements were not deemed to be effective by many survey participants.

In addition to the mechanisms offered in the survey, participants from the private and industry sector did suggest other possible mechanisms that could support the creation of effective policies to promote PPPs. Among the options that had, to some extent, already been named in the previous report were:

- Coordinated aid and multilateral programs/strategies
- Energy conservation education
- International/regional energy integration and cooperation
- Other financial mechanisms
- Initial investment support
- Tax on carbon as well as other surcharges on energy consumption
- International consortium of various governments delineated by energy producers vs. energy consumers

Importance of policy options that best support PPPs in research, development, demonstration, and deployment

To stay profitable and meet the technology needs of increasingly cleaner and more efficient energy sources, private and industry stakeholders need to engage in research and development activities. In recent years, electricity producers have been faced with enormous challenges because of decarbonization efforts in many countries. To meet the targets set by policymakers, the industry sector, for example, has to invest in research and development to upgrade power plants, enhance their efficiency, explore new possibilities to store energy and improve the transport of electricity to where it is needed. Moreover, RDD&D of new innovative technologies, make it possible, among other things, to design tailor-made solutions for challenging

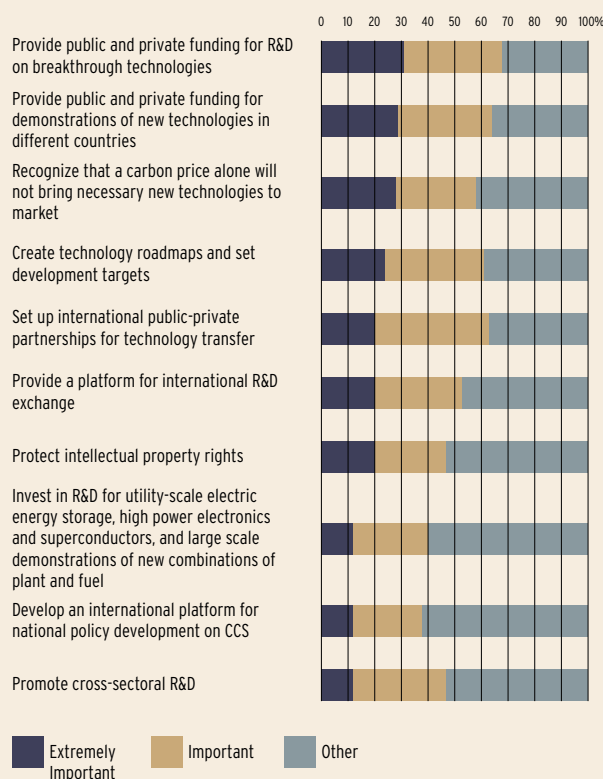


Zafarana Wind and Solar Project, Egypt

Source: KfW Bankengruppe

environments. PPPs can be a tool to bring forward RDD&D projects in developing and threshold countries as well.

DEFINING EFFECTIVE PUBLIC-PRIVATE PARTNERSHIPS IN RESEARCH, DEVELOPMENT, DEMONSTRATION AND DEPLOYMENT OF PROJECTS



When private and industry stakeholders were asked to name the most important policy options that support PPPs, particularly in RDD&D, the answer was clear: a majority of respondents stated that the most important policy options would be those helping secure additional funding for RDD&D projects. Almost 70% of survey respondents from this stakeholder group emphasized the importance of obtaining both, private and public, funding for RDD&D on breakthrough technologies. Moreover, slightly fewer indicated that policies that help provide public and private funding for demonstrations of new technologies are among the most important for supporting PPPs in this sector.

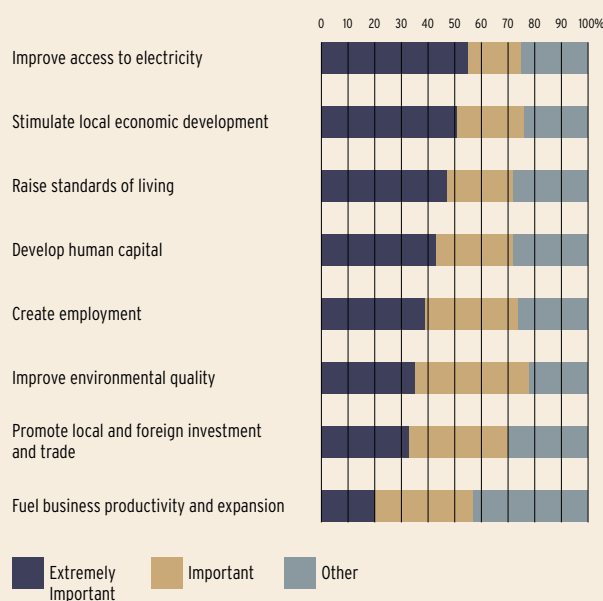
The reason why the private side places such an emphasis on the financing of RDD&D is that it usually requires large investments; it is relatively risky and largely yields no profit. Nonetheless, companies continue to consistently invest in RDD&D. Tailor-made solutions for deploying sustainable electricity technologies in developing regions and increasing access to electricity for poor populations requires the support—including the financial support—of the public partners. RDD&D projects are essential to adapting technologies to the particular local environment and needs, but are not commercially viable most of the time. That is why public support is vital and makes sense, as the public sector has a direct interest in decarbonizing energy supply and reducing energy poverty. PPPs offer an effective framework to join forces in this field and tackle these challenges jointly.

Private and industry stakeholders recognize the potentials and synergies in PPPs for RDD&D. These companies are ready to become engaged in RDD&D projects with public partners and bring in their capital, experience and technological know-how. When explicitly asked in the survey how important this issue was for them, a clear majority of almost 63% rated the establishment of international PPPs, including for the purpose of transferring their technology to their public partners, as extremely important. Moreover, private and industry respondents stressed the importance of creating clearly delineated technology roadmaps and setting development targets.

Benefits produced by strong PPPs

As stated before, knowing and understanding the motivations of stakeholders can greatly help to improve cooperation and enhance chances for success. That is why private stakeholders were asked which benefits produced by strong PPPs they regarded as important.

BENEFITS OF PUBLIC-PRIVATE PARTNERSHIPS FOR ELECTRICITY TECHNOLOGY ADVANCEMENT



Every main industry sector has an impact on the environment where it is active. The energy sector—regardless of whether it is the extraction or the power industry, for example—has long been at the centre of discussions. This is why the power industry has a decades-long record of accomplishments in minimizing its environmental impact, particularly by upgrading power plants, advancing new technologies and improving infrastructure. In fact, 80% of respondents indicated improvements in environmental quality as an important benefit produced by a strong partnership. In doing so, the power sector has been able to considerably increase

the efficiency of its generation and transport capacities, bring forward renewable power, and lower its overall impact on the environment.

A similar number stated that the stimulation of local economic development was a central benefit of a successful partnership. Companies are well aware of the importance of strong local partners in implementing successful projects, especially in regions where they might lack experience. While local public support is crucial, local businesses can also be a strong partner to embark on challenging projects. Access to energy allows for economic development, and economic development increases demand for modern energy services—a win-win situation for private and industry stakeholders and their local partners.

Improving access to electricity is a necessary first step for local economic and social development. While almost an equal number of approximately three-quarters of stakeholders in this group acknowledged the importance of this benefit, just over half regarded this as a priority issue: no other potential benefit got a higher ranking. As stated above, energy access fuels economic development, which creates employment, develops human capital and raises standards of living. Moreover, it can also help improve the environment when low-grade energy sources (i.e., wood) are replaced with electricity. A very clear majority of respondents supported all these benefits listed above, yet none received the same high priority as improving energy access, since all other benefits emanate from it.

In addition, respondents also named other important benefits that are produced by strong partnerships. Some of them reflect the very practical perspective of companies; others are more general.

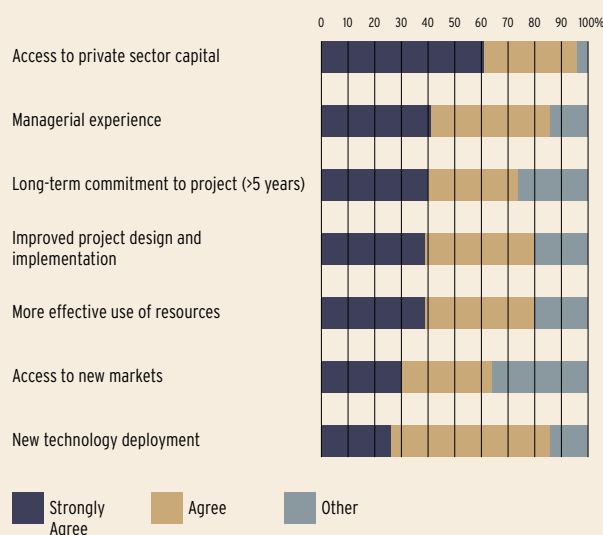
- Facilitate a profitable project environment
- Provide better project funding
- Reduce risk
- Improve education, training and performance
- Facilitate navigation of multinational/bureaucratic processes to reduce risks and enhance financial viability
- Provide affordable energy and clean energy technologies

Contribution of the private sector to strong partnerships

Partnerships work best when each party knows what to expect from the other. But it is at least equally important that each side knows what it is able and willing to contribute to a partnership to bring the project to fruition.

Regarding the private sector's contribution to strong partnerships, there was almost unanimous agreement among the stakeholders of this group that the most important contribution consists in providing access to the sector's capital. Over 90% agreed with this, and approximately 61% rated it as the most important way the private sector could contribute to strong PPPs: no other issue obtained nearly as much support. This impressively underscores the commitment of private as well as industry stakeholders to a deep involvement with the public side, and also shows their efforts to ensure the success of their partnerships. For profit oriented entities, committing their own capital toward a partnership or a specific project may be regarded as the strongest commitment to its success.

LEVEL OF AGREEMENT WITH WAYS THE PRIVATE SECTOR CAN CONTRIBUTE TO THE STRONGEST PARTNERSHIPS FOR ELECTRICITY TECHNOLOGY DEPLOYMENT



The private sector is constantly under pressure to be cost-effective. Therefore this stakeholder group has always been careful to use all types of resources as efficiently as possible, regardless of whether the resources are operating supplies, capital, human or organizational resources. Over time, stakeholders have acquired vast know-how and technologies in this respect. That is why the private sector feels confident that it can substantially contribute to strong partnerships by bringing in its managerial experience and capabilities in making more efficient use of resources. Both issues were backed by over 86% and 80% of respondents

respectively. Moreover, these stakeholders also feel generally confident that one of the most important contributions they can make to strong PPPs consists in granting their partners access to new technologies and helping them with the deployment. Exactly 86% of respondents agreed with this.

Respondents also gave additional contributions on how private stakeholders could contribute to strong partnerships. Among others, the following were named:

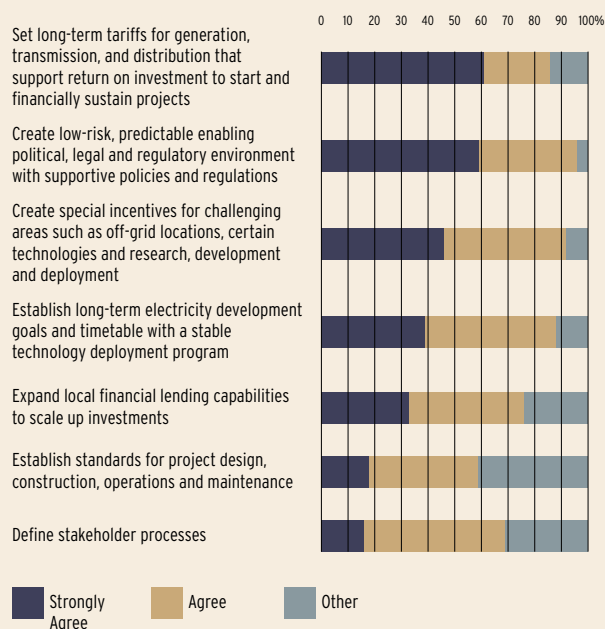
- Risk management
- Coordination of financing sources (channelling of international financial sources)
- Non-asset based lending practices (i.e., projected revenue streams)
- Alternative global funding resources (i.e., hedge funds, private equity, initial public offerings)
- Public relations and marketing skills to help change perceptions of new technologies
- Networks of entrepreneurs/business people to stimulate innovation and competition from other firms
- Technology innovation and the introduction of new technologies
- Technology and skill transfer

As noted in the last report, accessing new markets was met with some reluctance by respondents. This finding was revalidated by the analysis of the new dataset, as this issue was rated the lowest of all in this category. Again, one third of this stakeholder group did not agree that this issue is an important contribution of private and industry stakeholders to strong PPPs.

Contribution of the public sector to strong partnerships

While companies know what they are willing to bring into a partnership, they also know what they need and expect from their public partners. The private sector tends to favour measures that help bring down risks before committing to investments. Stakeholders in this group overwhelmingly agreed that the best way the public sector could support strong PPPs was by creating a low-risk political, legal and regulatory environment with supportive policies and regulations that allow predictability. A very clear majority of almost two-thirds gave this issue the highest rating, and virtually all respondents —over 96%— agreed that this is a way for the public partners to contribute to a strong partnership.

LEVEL OF AGREEMENT WITH WAYS THE PUBLIC SECTOR CAN CONTRIBUTE TO THE STRONGEST PARTNERSHIPS FOR ELECTRICITY TECHNOLOGY DEPLOYMENT



Moreover, respondents reinforced the importance of predictability and risk mitigation by specifying the possible long-term contributions of their partners on the public side. For example, an overwhelming majority of respondents deemed it important that public stakeholders establish long-term electricity development goals as well as a timetable and a stable technology deployment plan. Many also strongly agreed that public stakeholders should contribute by setting long-term tariffs for generation, transmission and distribution that support return on investment to start and financially sustain projects.

In addition, private respondents highly value the public side's detailed knowledge regarding the specific characteristics of certain regions or communities. Using this knowledge enables public stakeholders to implement tailor-made policies and regulations that best foster an environment in which to address the needs of these challenging regions. For example, private stakeholders regard it as very important for the public side to create special incentives for certain technologies and for research, development and deployment in regions such as off-grid locations. With 92% agreeing on this being an important contribution, this subject can be regarded as one of the most important contributions of the public sector from the perspective of private respondents.

Other potential ways the public side could contribute to strong PPPs that were named by respondents include:

- Identify the areas of public interest that are not addressed, and then create public policies to address those public needs
- Coordinate activities of the various levels of government to ensure that they are issuing coherent signals and incentives
- Streamline regulatory and environmental approvals
- Educate the public on the need for and benefits of the partnership
- Put off-grid development on a level playing field with grid extension
- Establish low interest loans and project financing

What contributes to ineffective partnerships?

Regarding the possible factors that contribute to ineffective partnerships, the private side's responses fell into the three established categories of policies, partnerships and projects.

Policies:

Similar to public stakeholders, the private and industry sector deemed the lack of a clear, long-term and predictable policy framework to be one of the most common reasons for unsuccessful partnerships. They stressed the importance of clear regulations and formal energy and technology strategies that can substantially help lower investment risks and deliver outcomes in line with the needs of the local communities. Moreover, the policies in place have to be stable. It is important that policies and regulations not change with every election, for example, as this would increase risks for investors, adding uncertainty. However, while supporting policies and regulations are needed to assure the long-term success of a partnership or project, it is important not to over-regulate, as bureaucratic red tape is known to be an inhibitor for the successful implementation of projects.

Respondents also stressed the importance of a clearly defined strategy for public-private partnerships, defining roles, goals and commitments. This would greatly improve the chances of success of a partnership and the implementation of the agreed-upon projects. This is especially true as many stakeholders of the private and industry sector saw the lack of clear roles and responsibilities as one of the main reasons why partnerships fail to be effective.

Partnerships:

Respondents also indicated that a common reason for inefficient PPPs is the lack of a clear partnership strategy, which can increase the risk of bringing together partners with very different interests and goals or give rise to unrealistic expectations. Commonly, the underlying reason for this is a lack of clear communication or a lack of trust between the partners.

One recurring impediment for successful partnerships voiced by the private and industry side is a lack of support by the public partners. Respondents stressed that short-term thinking—from one election to the other— and putting politics over the economics of a project can prevent a project from materializing. However, respondents also pointed out that companies from the private sector may be equally prone to certain unreliability when they are driven by short-term financial objectives.

Projects:

Something similar can happen with specific projects in a partnership. They may fail if the objectives are not clearly defined and if there is no open and honest communication between the parties involved. Furthermore, lack of support from all partners, but also from the general public, can lead a project to fail.

Private and industry respondents underlined the importance of finding proper financing for a project. They pointed out that financing issues are one of the most common reasons for unsuccessful projects, whenever financing schemes are not well elaborated.

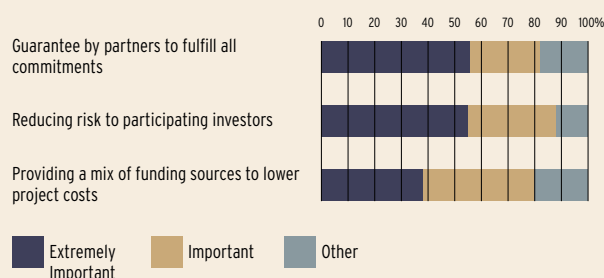
Other possible reasons for unsuccessful partnerships and projects according to this stakeholder group can be:

- Political instability and corruption
- Involvement of too many or of irrelevant stakeholders in one partnership or project
- Lack of accountability
- Lack of capacity-building programs

Role of PPPs in ensuring proper financing

Private and industry stakeholders surveyed seemed to have had very positive experience when partnering with public stakeholders for a given project, and thus found very solid arguments in favour of this type of partnership. Moreover, private respondents stressed the importance of these partnerships for ensuring proper financing, especially in a challenging environment.

ROLE OF PUBLIC-PRIVATE PARTNERSHIPS IN ENSURING PROPER FINANCING



Private and industry stakeholders underlined the key role of PPPs in reducing the risks for all participating investors. Almost 88% of respondents in this stakeholder group said partnerships with the public side were especially effective and important in this regard. More than half even rated the contribution of PPPs in mitigating risks as extremely effective. Partnerships are able to provide this because they help bring together key stakeholders and help create trust and commitment on both sides. In addition, partnerships can help to balance the positions of each party and enhance transparency.

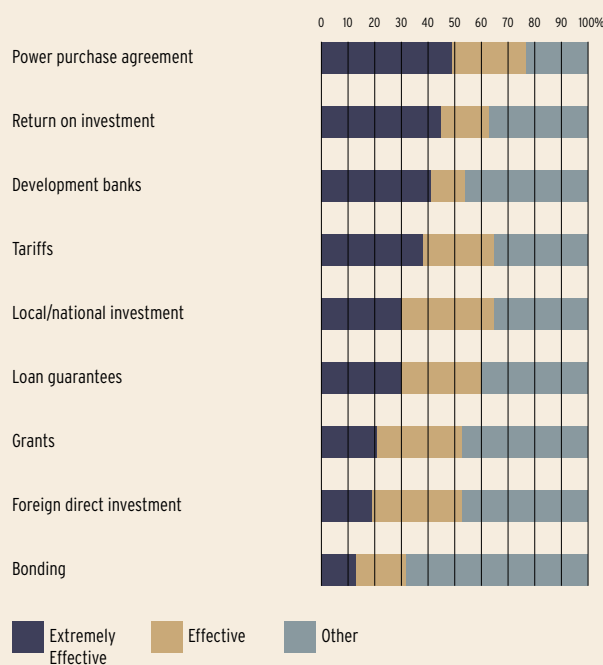
Moreover, approximately 82% of private respondents thought that partnerships are an important instrument for increasing the reliability of partners. An overwhelming majority of respondents even rated this issue as extremely important. It follows that reliable partners who fulfill all their commitments further reduce the risks for investors and can help dramatically reduce project costs. Moreover, respondents stressed that partnerships were especially effective in this regard when all parties become equity stakeholders in a project.

Concerning financing, almost 80% of respondents also believed partnerships could help curb costs by providing a mix of funding sources and simplifying procedures for financing.

Effectiveness of different financing instruments in promoting low-carbon and zero-emitting technologies

The respondents from the private and industry sector were very clear regarding the importance of adequate financing of a partnership or project for its viability. Although various financing mechanisms received the respondents' support, none was rated as effective as PPAs. This, of course, is rooted in the long experience of the industry with these kind of schemes, which allows for a high level of certainty. For companies, the guaranteed long-term income streams generated by PPAs can be key for operating in, for example, new countries and regions that otherwise would be deemed too risky. In this context, PPAs are especially important for the companies' long-term investments. Almost half of respondents rated PPAs as extremely effective.

EFFECTIVENESS AT PROMOTING LOW-CARBON AND ZERO-EMITTING TECHNOLOGIES, INFRASTRUCTURE EXPANSION (TRANSMISSION, DISTRIBUTION, STORAGE) AND THE DEPLOYMENT OF EFFICIENT TECHNOLOGIES



While other financing instruments, such as local or national investment and tariffs, were rated as effective, the response regarding development banks is inconclusive. On one hand, just below half of respondents showed support for involving these stakeholders in the financing of a project. On the other hand, more than 41% rated them with the highest possible score, saying that development banks are extremely effective at promoting partnerships, specifically for low-carbon and zero-emitting technologies.

Bonding was rated the lowest by the survey's respondents of this stakeholder group, and was clearly rejected as an effective means of financing projects and partnerships. Overall, close to 70% did not support this financing instrument.

Among other financing mechanisms, the following were named by participants of the survey:

- Specialized securitized financial products for global investors (i.e., sell shares of an international member-based consortium)
- Specialized venture capital/hedge fund financing for applicable projects or segments thereof
- Vendor financing through international export banks and their manufacturing clients
- Funds from emissions trading, carbon credits, carbon funds
- Concessional/soft loans (provided to poorest countries with lower interest rates and longer repayment periods than typical or standard market or multilateral loans)
- Climate Investment Funds
- Taxes (including tax credits) and/or import duties on some technologies/parts



ACCESS TO SUSTAINABLE ENERGY REQUIRES PARTNERSHIPS

Mr. Paul van Son

CEO, Dii and Chairman, Energy4All Foundation, The Netherlands



Mr. Job van Roijen

Managing Director, Energy4All Foundation, The Netherlands

In spite of efforts to increase energy efficiency and renewable energy production, global energy consumption will be at least one third higher by 2035 according to the IEA. Furthermore, energy poverty is still an issue, despite increased investment in energy infrastructure. With these issues in mind, the United Nations has declared 2012 to be the *International Year of Sustainable Energy for All*.

The good news is that renewable energy sources in developing countries are abundant. In Africa alone there is enough sun, wind, hydro and clean biomass available for a carbon-free economy. This potential for clean energy can be the basis to help the poorest people access affordable, clean energy, and at the same time foster the transition of industrialized countries toward sustainable economies. Both of these developments can reinforce each other, and for such a scenario to be

successful, a strong commitment and the support of many public and private stakeholders is needed. Two complementary initiatives, Dii (the Desert energy industrial initiative) and NICE International (an initiative by the Energy4All Foundation), illustrate how public-private partnerships can work toward sustainable development.

Dii, a unique large scale initiative of over 55 international companies

The Middle Eastern and North African (MENA) deserts offer excellent conditions for large-scale solar and wind power generation. Power generated from sun and wind is primarily intended to meet the local demand in North Africa and the Middle East and will also allow the producing countries to export energy to Europe.

Dii's overall mission is to create a market for renewable energy from these areas. The initiative acts as an enabler and catalyst for desert power in partnership with international and local political and industrial representatives. Since its inception in 2009, more than 55 industrial companies and research institutes from Europe and North Africa have joined Dii. More than an industrial initiative, Dii is considered the central point of a network bringing together the scientific and business communities as well as governments and NGOs to create a fair marketplace for the expansion of renewable energy from deserts.



Source: Dii



Source: NICE International

NICE, a unique small-scale initiative

NICE International (NICE) is the first social venture started out of the Energy4All Foundation. The foundation is an initiative by executives and representatives in the energy sector, with a goal of improving the living conditions of local communities in Africa through a concept of robust “micro-utilities” that provide access to off-grid energy, water and ICT services. The approach of Energy4All is unique since it is based on local entrepreneurship and close cooperation with local authorities and NGOs.

NICE International now runs a network of franchised NICE centres to provide energy and ICT solutions for education, work and business in Sub-Saharan Africa. To expand the network of NICE centres it is essential for the public and private sectors to join efforts toward common goals. Locally, the general public and grass-roots communities participate in customer associations and steering committees. Nationally, government and NGOs are involved to promote the use of renewables and to facilitate training and education services. At an international level, a EUR 2.5m grant of the EU Energy Facility and private sector investments will enable expansion to fifty NICE centres in Gambia, Tanzania and Zambia by 2015. This opens the way for social and economic development for over one million people.

Public-Private Partnerships

Each stakeholder within the Dii and NICE initiatives has a responsibility. The role of the national governments is to set the long-term strategy for the country, to adopt strong governance and regulatory framework in order to encourage the private sector to invest and, where necessary, to create an environment that further supports investment and entrepreneurship. The role of the private sector is to create business ideas and to mobilize entrepreneurship, capital and skills. Where the commercial case is marginal, the public sector should use its possibilities to leverage greater private sector investment. A broad cooperation is necessary to further involve NGOs, universities and R&D institutes, media and the general public. A combination of public and private partners better reflects the socio-economic factors.

Due to the size and complexity of large-scale energy assets, the focus at Dii is on the development of a stable long-term investment climate. This requires close cooperation between the industries and local, national (e.g., Morocco, Algeria, Tunisia) and international authorities (e.g., European agencies) to create and maintain energy market conditions and to mobilize public funds in order to bridge initial investment gaps. The industry definitely has a stimulating role in this process.

The experience by Dii also applies to small-scale initiatives such as NICE. A stimulating role of the industry in cooperation with local and international organizations and authorities is indispensable for covering R&D and other start-up costs. Private sector investment, early involvement of different sources of public funding, sound business policies of receiving countries and communities, as well as knowledge contributions from technology centres and universities have worked well together, but should also be safeguarded for the future.

Whether large or small, ideas and initiatives aimed at enhancing energy efficiency and use of renewable energy, as well as improving energy access, will need public-private partnerships to be successful.



Caracoles Project, Uruguay

Source: Ing. Oscar Ferreiro

ANALYSIS OF THE DATA FOR THE DEVELOPMENT BANKS AND AGENCIES GROUP

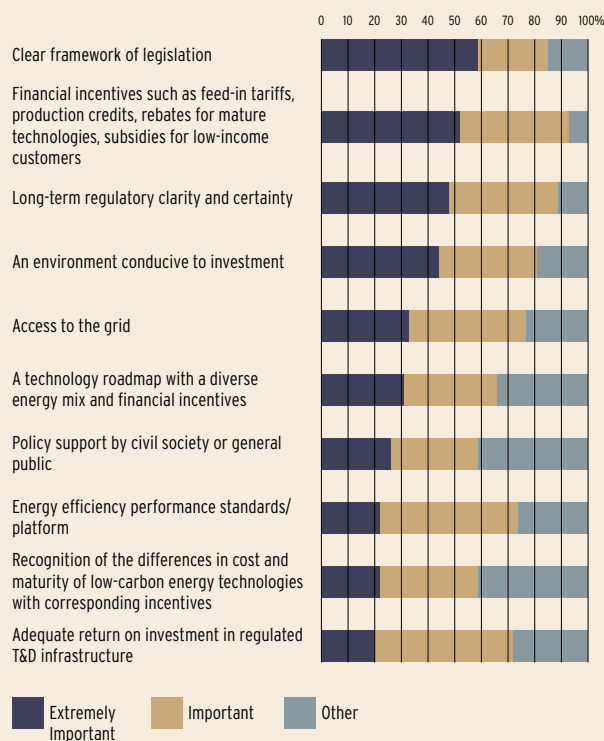
Only a few stakeholders from this group participated in last year's report. This time, 27 different stakeholders participated, including some of the most important development banks and agencies and actors from the financial sector and civil society.

The responses of this group are especially interesting, as these organizations deal with issues like sustainable technology deployment, energy poverty and partnerships between public and private parties, and have been able to acquire considerable experience in the field.

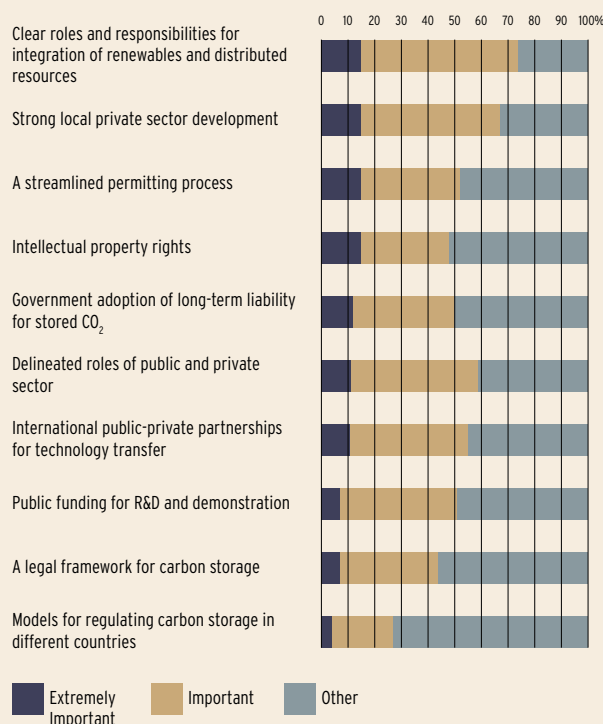
Supporting policies

Development banks and agencies have a great deal of experience cooperating with public and private stakeholders in many countries and regions, as they are deeply involved in the implementation of projects and in many different issues related to financial, social and technological aspects of energy. For this reason, development banks and agencies are in a unique position to compare the design, implementation and impact of the right policies and policy elements to promote successful partnerships. Taking a closer look at the responses of this group, four policy elements clearly stand out.

POLICY ELEMENTS THAT PROMOTE LOW-CARBON AND ZERO-EMITTING TECHNOLOGY AND ENERGY EFFICIENCY



OTHER POLICY ELEMENTS THAT PROMOTE LOW-CARBON AND ZERO-EMITTING TECHNOLOGY AND ENERGY EFFICIENCY



Because of their vast experience, these stakeholders know exactly how important it is to have the right policies in place. In addition, they know that the rules in place have to be clear and transparent to all players involved. Moreover, the rules have to provide a high level of legal certainty if partnerships are to invest long-term in a sector like energy. In short, players that get involved in the field need security, especially regarding their investments. It should not be surprising therefore that more than 85% of respondents stressed the importance of a clear framework of legislation and a vast majority of almost 60% even rated this policy element with the highest possible score. Similarly, respondents highlighted the importance of predictability and certainty, with approximately 89% of respondents asserting that long-term regulatory clarity and certainty are key components of a policy to promote partnerships in the field of low-carbon and zero-emitting technologies and energy efficiency measures.

Respondents in this stakeholder group understand that predictability, transparency, and legal certainty are indispensable elements of a policy that aims to attract private and industry players. They also understand, however, that these elements—although a prerequisite—will not suffice. Overall, governments should also offer an environment conducive to investment in order to attract the relevant players. An overwhelming majority of survey participants supported this idea, with almost 45% giving this policy element the highest rating.

Nevertheless, especially for new technologies or for underdeveloped regions and markets, often special incentives, like guarantees, tax rebates or subsidies are also needed, at least in an initial phase. That is why respondents chose, among the highest rated policy elements, the provision of feed-in tariffs, production credits, rebates for mature technologies, and subsidies for low-income customers. The latter received the highest overall rating, obtaining the support of close to 93% of all development banks and agencies, with just over half rating it as extremely important.

Regarding the least important policy elements, respondents showed little support for rules concerning intellectual property rights, a legal framework for carbon storage and specific models for regulating carbon storage in different countries. It may be assumed that the elements were rated purely in the context of sustainable electricity projects in threshold and developing countries. Here, CCS might play only a marginal role, and the focus may lie not in the deployment of brand-new technologies, but on a unique, tailor-made combination of different technological solutions where intellectual property rights are not a priority.

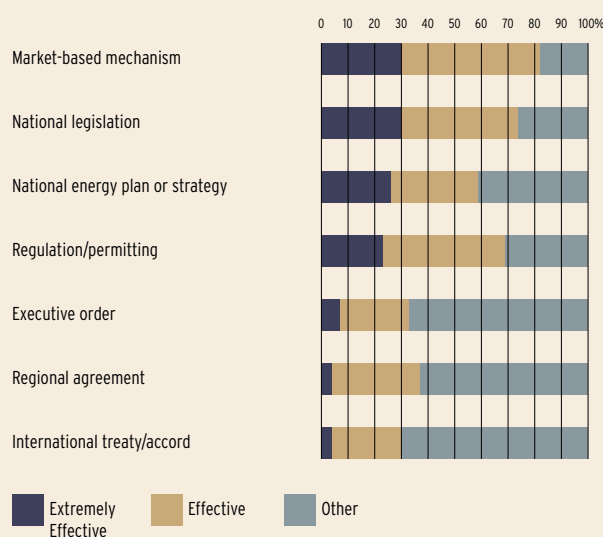
Regarding effective mechanisms to establish the right policies to promote public-private partnerships, the responses from the development banks and agencies group show a unique distinctiveness. While national legislation and regulation were named as effective mechanisms, national energy plans and strategies only received relatively low support, with barely 60% rating them as particularly effective. Even more interesting, however, is the extraordinary support from this stakeholder group for market-based mechanisms. They were regarded as extremely effective by almost a third of respondents, and overall were deemed adequate mechanisms for establishing effective PPPs to promote any type of zero- and low-carbon emitting technologies, as well as measures to fight energy poverty.



Ifugao-Ambangal Mini-hydro Project's powerhouse, Philippines

Source: Global Sustainable Electricity Partnership

EFFECTIVE WAYS ENERGY POLICIES CAN BE ESTABLISHED



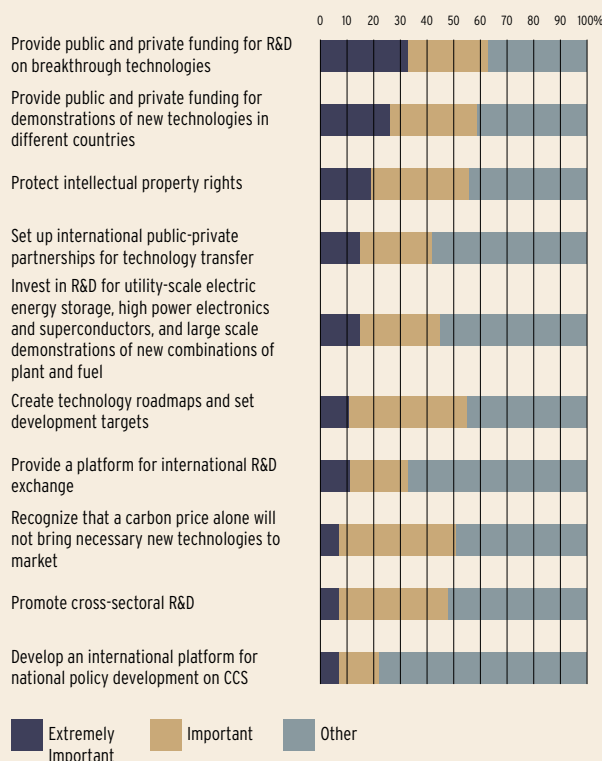
Regional agreements and international treaties for the above-mentioned purpose were not supported by this stakeholder group. This is particularly significant, as many development banks and agencies are internationally active and have direct experience with these kinds of treaties and agreements.

Importance of policy options that best support PPPs in research, development, demonstration, and deployment

Development banks and agencies are accustomed to analyzing economic situations, putting forward social development goals and financing projects. Issues regarding research, development, demonstration and deployment may not necessarily be within their area of focus. Overall support for these options was rather low, compared to the rating of other policy elements.

One possible explanation might be the framing of RDD&D related issues solely in the context of emerging and developing countries' needs, with a focus on sustainable technology deployment and energy poverty issues. As a consequence, RDD&D elements may not have been regarded as especially critical for countries that tend to be financially constrained and are in need of solutions in the short term, which are often found with existing technologies and well-known and understood instruments. Hence, stakeholders did not attach much value to extensive cooperation in this field, and rated the provision of a platform for international RDD&D exchange or the setting up of a partnership for technology transfer as rather unimportant.

DEFINING EFFECTIVE PUBLIC-PRIVATE PARTNERSHIPS IN RESEARCH, DEVELOPMENT, DEMONSTRATION AND DEPLOYMENT OF PROJECTS



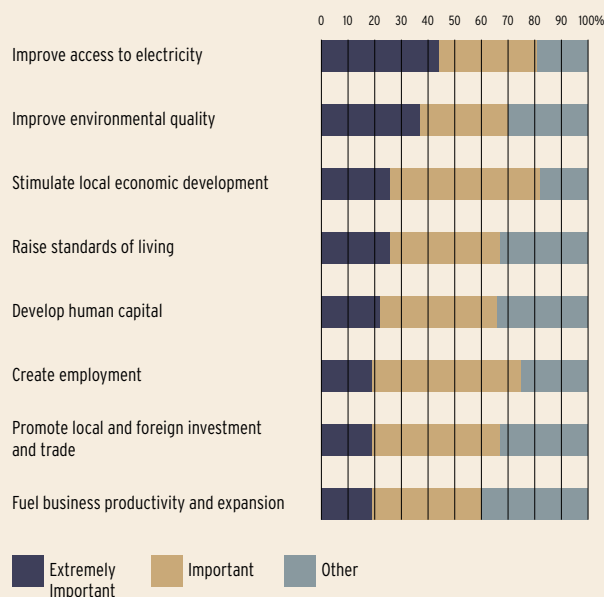
This, however, does not mean that development banks and agencies did not see any importance in policies that support RDD&D. In fact one aspect stands out after analyzing the responses. When asked to rate financial elements to support PPPs in this field, participants by and large supported these particular policy elements. For example, providing public and private funding for RDD&D on breakthrough technologies was judged to be an especially important element. This may be due to the reference to “breakthrough” technologies, which evoke high expectations and hint at a possible short-term implementation of the technology. One third of respondents even rated this policy element with the highest possible level of “extremely important.”

Another element with strong support among this stakeholder group is also related to financing. Development banks know that different regions and countries often may need different, tailor-made solutions to tackle similar problems. When new technologies have reached a certain maturity level, demonstration projects are needed to prove they are fit for large-scale deployment. These demonstration projects frequently offer new ways of solving a problem by implementing new technologies in known environments or known technologies in new settings. Hence, the funding of this kind of project can offer an added value for developing countries without them having to bear the burden of engaging in expensive research and development. Consequently, approximately 60% of respondents supported providing public and private funding for demonstrations of new technologies in different countries.

Benefits produced by strong PPPs

Development banks and agencies have long since recognized the nexus between energy and social as well as economic development. Moreover, they are crucial players when it comes to promoting clean energy and financing technologies to mitigate climate change. This becomes obvious when looking at the respondents’ rating of the top benefits produced by strong public and private cooperation. For example local economic development was rated as a top priority by these stakeholders. With almost 82% of participants from this group saying that this benefit was extraordinarily important, it was the highest rated benefit of all.

BENEFITS OF PUBLIC-PRIVATE PARTNERSHIPS FOR ELECTRIC TECHNOLOGY ADVANCEMENT





Biogas Plant of the Green Elephant GmbH, IREDA-KfW Project, India

Source: KfW Bankengruppe

Yet, economic development must go hand in hand with social development to be sustainable. For this reason, almost all actors in this survey group supported projects and initiatives that have a dual focus on both elements of development. The creation of employment opportunities is one of the best examples, as these opportunities require a positive economic environment of growth and are critical to lifting populations out of poverty. Almost three quarters of the surveyed stakeholders in this group stressed the importance of employment creation as a top benefit to be gained from successful PPPs.

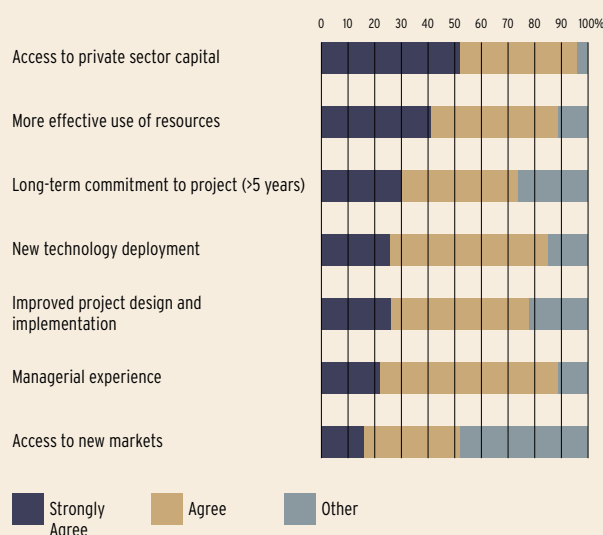
Moreover, the role of energy in the context of social and economic development has been growing in the last decades. The link between economic growth, poverty eradication and access to energy has now been widely acknowledged by all relevant stakeholders, with electricity being a key component. The importance of this aspect for the development banks and agencies stakeholder group is shown by the fact that more than 81% of respondents rate improved access to electricity as crucial, and close to half even rated this as extremely important—the highest rating achieved on this issue. Respondents also named strengthening security of energy supply and quality of service as additional key benefits emanating from strong and successful PPPs. It should be noted that supply security explicitly encompassed access to both a reliable and an affordable energy supply.

Furthermore, climate and environmental issues were named as important benefits to be reaped from successful partnerships. With the rising awareness regarding climate change, some banks, agencies and other institutions have included these topics in their main activities. Some institutions were even established with the sole purpose of promoting projects and initiatives in this area. As a minimum benefit, respondents expected partnerships and specific projects to at least help increase awareness of environmental and climate problems as well as an environmentally sustainable way of living. Respondents clearly underlined the importance of ensuring that all projects in this field contribute to the reduction of greenhouse gas emissions and help create resilient systems to adapt to climate change. More than 70% of respondents indicated that improving environmental quality was one of the most important benefits, with almost 40% rating it as extremely important.

Contribution of the private and public sectors to strong partnerships

Development banks and agencies regularly work together with public and private stakeholders in partnerships or projects, and thus can provide a valuable third perspective on public-private partnerships.

LEVEL OF AGREEMENT WITH WAYS THE PRIVATE SECTOR CAN CONTRIBUTE TO THE STRONGEST PARTNERSHIPS FOR ELECTRICITY TECHNOLOGY DEPLOYMENT



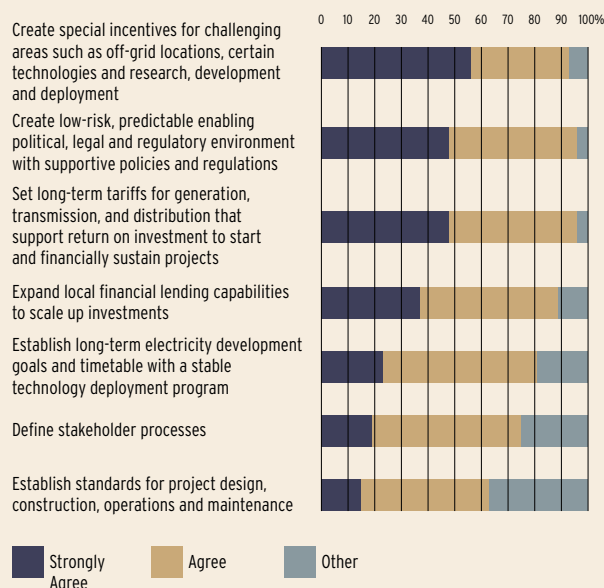
Four possible contributions from the private sector obtained very strong support. By far the most important contribution companies can make, according to development banks and agencies, is to give access to private and industry capital. Not only did more than 96% stress the great importance of this contribution, over half gave it the highest possible rating. This was the only occasion where a large majority of survey participants assigned the highest possible score to a single private sector contribution.

In addition to making capital available, respondents also valued the operational experience of private and industry stakeholders very highly. Approximately 89% of development banks and agencies indicated that the managerial experience of private stakeholders and their superior use of resources were key contributions for successful partnerships. They believe that private partners, because of their experience, are better able to have an overview of the total costs of the full life-cycle of a project. Moreover, development banks and agencies indicated that the private sector also was in a position to operate at a faster pace than the public sector alone.

Respondents stressed the private sector's ability to deploy new technology as especially important. More than 85% regarded this as a key contribution. In this context they also felt that this technological know-how

ensured better sustainability of the project, not only in an economical but also in an ecological sense. In addition, survey participants asked the private side to contribute by allowing for a full technology and skill transfer to their public partners in order to guarantee the long-term success of a project.

LEVEL OF AGREEMENT WITH WAYS THE PUBLIC SECTOR CAN CONTRIBUTE TO THE STRONGEST PARTNERSHIPS FOR ELECTRICITY TECHNOLOGY DEPLOYMENT



While the surveyed development banks and agencies highlighted the financial and operational capabilities of private and industry stakeholders as crucial contributions to successful partnerships, they laid special emphasis on the public side's ability to offer the framework required for their partners to operate. Creating a low-risk and predictable political, legal and regulatory environment with supportive policies and regulation was rated as vital for successful partnerships by more than 96% of respondents. Furthermore, in regulated markets, the development banks and agencies agreed that the public side should also set long-term tariffs for generation, transmission and distribution that support return on investment to start and financially sustain projects, since close to all of them rated this as a crucially important contribution from the public side to strong PPPs.

In non-regulated markets, creating attractive opportunities can mean introducing special incentives for challenging areas such as off-grid locations, certain technologies and RDD&D activities. Respondents left no doubt as to the importance of this contribution; not only did almost 93% support this idea, but a majority of nearly 56% strongly agreed that this is vital to the long-term success of partnerships.

What contributes to ineffective partnerships?

Development banks and agencies were asked —like the other stakeholder groups— what could lead to failing partnerships between the public and private sectors.

Policies:

Respondents in particular emphasized the vital importance of the right policy framework for the success of a partnership. They underlined the importance of predictability, legal certainty and transparency for the long-term success of public-private cooperation. According to this group, governments should in all circumstances refrain from unexpected changes in legislation motivated by possible short-term political gains. This type of action will often result in companies abandoning efforts, or in stranded investments. Instead they should honour the guarantees given and provide for long-term incentives.

In addition, streamlined processes should be introduced, since they contribute greatly to an attractive environment for companies. Procedures that are slow and technology-focused rather than outcome-based create difficult environments for projects to succeed.

While establishing an attractive environment for companies was something all respondents concurred with in principle, one survey participant advised against a completely unregulated engagement of the private sector, since public stakeholders may have different priorities from their private partners. With a clear set of goals and development targets for reforming their energy market, deploying clean energy technologies and fighting energy poverty, the public sector partners can support successful PPPs.

Partnerships:

Having clarity regarding one's own goals and visions is a first necessary step to avoid teaming up with the wrong partner in the first place. When goals and visions differ too much, and long- as well as short-term interests cannot be aligned, partnerships will not be successful. Moreover, it also helps to prevent unrealistic expectations and unclear responsibilities on both sides of the partnership, which bolsters commitment to the partnership and trust toward the partner. Respondents clearly identified lack of commitment, but also lack of support, from the private sector as common reasons for unsuccessful partnerships. In addition, they also stressed the particular importance of political support for partnerships and projects on the regional and local government levels.

Projects:

Lack of clarity can also lead to problems within a specific project. Development banks and agencies stressed the importance of transparent and well-established contracts, where risks are adequately shared between stakeholders and responsibilities are unambiguously defined. Unfair and opaque contracts binding both sides will not be sustainable in the long term.

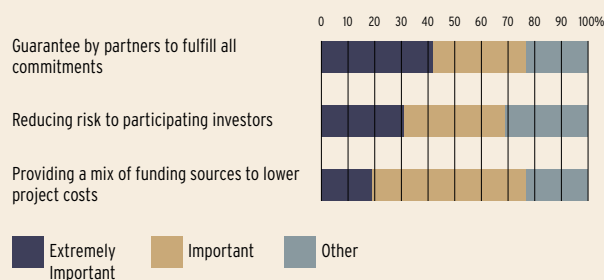
On an operative level, respondents urged the private sector to establish clear guidelines on work processes and to present binding and achievable timelines for the project. This is important in order to enhance transparency and commitment to the project. Moreover, companies should ensure transfer of know-how to their public partners and make sure to provide them with the necessary technical assistance. Inadequate provision of capacity-building programmes to partners will certainly lead to unsuccessful projects in the mid and long term.

Finally, respondents emphasized how important it is for a specific project to exhibit a clear and concrete added value for all parties involved. There is of course no single added value, since it may differ for each of the parties involved. Commonly, the added values can be for example the creation of jobs, CO₂ emission savings, technology transfer, development of certain sectors of the economy or —naturally— profit. Where the added value is unclear, projects will not materialize or fail.

Role of PPPs in ensuring proper financing

Development banks and agencies are key facilitators of projects and are especially involved in their financing. Therefore, their assessment of the role of PPPs in this area is especially interesting.

ROLE OF PUBLIC-PRIVATE PARTNERSHIPS IN ENSURING PROPER FINANCING



Although respondents of this stakeholder group acknowledged that partnerships —as a rule— do reduce the risks to participating investors and can provide a broader mix of funding sources that, in turn, may lower project costs, for them the main advantage of PPPs is

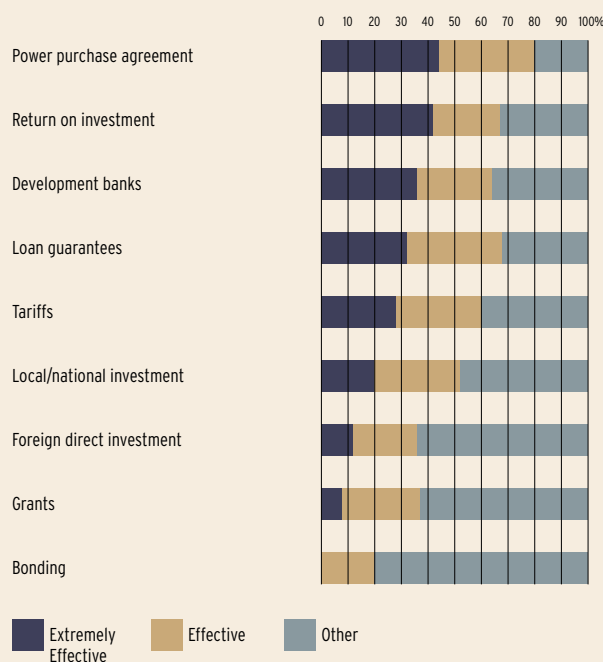
that they increase the likelihood that the commitments of the parties will be fulfilled. Not only did almost 77% of the surveyed development banks and agencies emphasize this fact, but more than 42% even rated it as extremely important. As the entities providing a big part of the financing for a project, development banks and agencies rate increased reliability as the most important added value of a partnership between public and private stakeholders.

This means that besides the manifold possible benefits of a partnership, stakeholders in this group decided to highlight the strong bond that unites the involved parties in a successful partnership as the most important feature—at least regarding the financing component.

Effectiveness of different financing instruments in promoting low-carbon and zero-emitting technologies

As mentioned before, financing is the domain of the development banks and agencies, and they have had ample possibilities to gather experience with different financing instruments to promote a variety of projects.

EFFECTIVENESS AT PROMOTING LOW-CARBON AND ZERO-EMITTING TECHNOLOGIES, INFRASTRUCTURE EXPANSION (TRANSMISSION, DISTRIBUTION, STORAGE) AND THE DEPLOYMENT OF EFFICIENT TECHNOLOGIES



Respondents supported a wide range of financing instruments and types, which could point to a mindset of using a specific instrument whenever it fits a specific situation. For example, simply letting market forces produce a certain return on investment might be sufficient for well developed markets. Almost 42% of respondents even rated this type of financing as extremely effective when it came to promoting zero- and low-carbon technologies or enhancing access to electricity. However, in some cases risks might be so high that a project will not be initiated or will fail to find suitable partners. For these cases, loan guarantees may provide stakeholders with the needed confidence and support to launch a joint partnership or project. A majority of 68% supported loan guarantees as effective financing instruments.

Nevertheless, by far the strongest support went to power purchase agreements. From the participating development banks and agencies, a majority of 80% regarded these types of agreements as an especially effective way of financing electricity projects. A plurality of 44% of these stakeholders even deemed PPAs to be extremely effective. By guaranteeing a secure income stream, PPAs are especially suited to ensuring long-term success of projects in a market that would otherwise not back up an investment.

On the other hand, the instruments that found no support from respondents were behind by a large margin. Foreign direct investment, for example, was not deemed an effective instrument—only slightly more than 37% thought differently. Also, bonding received a very low rating, with just 20% of support, obtaining the lowest evaluation of all proposed financing instruments. Yet, similarly to the answers by the other stakeholder groups, a large percentage of respondents did not know or were not sure about bonding or its efficiency. In contrast to the other stakeholder groups, development banks and agencies did not support grants as an effective way to finance electricity projects.



PROMOTING RENEWABLE POWER AND ENERGY EFFICIENCY

Ms. Monique Barbut

CEO and Chair-Person, Global Environment Facility

The demand for sustainable electricity is growing the fastest in the world's developing countries. The pressure on power generation is not likely to let up any time soon. In the developing world, an estimated 1.3 billion people lack access to modern energy services. Yet existing power generation is already straining to meet current needs.

At the Global Environment Facility (GEF), we are exploring innovative public-private partnerships to help countries achieve their development goals while protecting the environment and mitigating global emissions of greenhouse gases. To promote sustainable electricity we focus on:

- The rapid expansion of renewable technologies to provide new sources of electricity supply
- And the broad application of energy-efficiency technologies in the building and industrial sectors.

Both these areas will require robust investment from the private sector to allow commercialization at the speed and scale needed to address both development demands and environmental goals.

Since its establishment two decades ago, the GEF has engaged with the private sector across a range of endeavours, from technology development and application to project design and implementation. Engagement with the private sector has been driven by the underlying idea that to have a long-term and positive impact on the global environment, private enterprises –the dominant driver of economic activity– must be encouraged to pursue commercially viable activities that also generate global environmental benefits. Environmental and economic benefits go hand in hand. In this vision, engagement with the private sector is not an end in itself, but a means to a larger goal.

During the planning for the GEF's current funding period, covering 2010-2014, negotiators understood and emphasized the importance of expanded engagement with the private sector and agreed to a private sector set-aside of \$80 million. Continuing this momentum, the GEF Council in November 2011 approved a revised private-sector strategy, defining specific modalities for utilizing the set-aside.

The GEF strategy today emphasizes partnerships with the multilateral development banks (MNBs) and private sector partners, moving away from traditional grant instruments and expanding use of non-grant instruments, such as loans, equity investments, and risk-sharing facilities. Through these innovative tools, the GEF funds can help reduce risks for private sector partners, helping unlock private sector investment for new electricity-related projects. Projects related to sustainable electricity could include a risk-sharing fund for energy efficiency investments by small and medium-size enterprises; an equity investment fund for renewable power; loans to companies with innovative energy-access business models –to name just a few examples. Investments go directly from the GEF's multilateral development bank partners to business partners.

The GEF approach prioritizes the use of non-grant instruments that hold the potential for return on investment which will allow resources to flow back for additional future investments. By leveraging private-sector funding through public-private partnerships, the GEF maximizes the benefits of its donor funds. Through this mechanism, GEF aims to catalyze \$10 of development bank and private-sector investment for every dollar of public donor funds.

The use of innovative financial mechanisms through public-private partnerships, although critical, is just one of the tools in our tool-kit for addressing global environmental challenges. Through traditional GEF grant mechanisms, the GEF supports technical assistance and capacity building to help establish appropriate feed-in tariffs or other policies to expand renewable energy, promote standards and labelling programs for end-use equipment, and foster other policies which can help establish the right environment to support private sector investment.

Public and private partners need to commit to the vital issue of energy access and sustainability. Together we will make this world a better place for all of nature's children.

SHARED VALUES – DIFFERENT PERSPECTIVES

As a whole, the survey results are very encouraging, as not many conflicting points of view were revealed. In fact, most of the time respondents across all stakeholder groups showed a common understanding of what is needed for successfully conducting a partnership and what purposes these partnerships and projects between the public and private sides should best serve. Still, differences and certain characteristics exist, mostly regarding the order of priorities.

Concerning the policies needed to facilitate partnerships between public and private stakeholders, almost no differences emerged. All survey participants agreed on the importance of a clear policy framework with a long-term regulatory clarity and certainty. Transparency, predictability and legal certainty were assessed as paramount to the success of a partnership. Policy elements that bolster clear roles and responsibilities were also regarded as important by all participants.

Although there was concurrence on the significance of establishing an environment conducive to investments for the successful deployment of sustainable electricity and on the reduction of the number of people without access to electricity, some differences exist. While public stakeholders do support the introduction of financial incentives, they seem to be rather cautious regarding this issue, while the other stakeholder groups strongly endorse their introduction. Development banks and agencies were especially convinced that feed-in tariffs, production credits, rebates and subsidies for low income customers, for example, can have a huge impact in promoting partnerships in the electricity sector of developing and threshold countries.

Another element that helps establish a positive environment for PPPs is the public's side readiness to contribute in-kind, together with the private partners, to the funding of specific projects. At least for RDD&D projects, this seems important. Public actors did not strongly support this issue, while the other stakeholder groups did.

When assessing the right mechanisms to establish the necessary policies, all three stakeholder groups agreed that national legislation and a national energy strategy were the way to move forward. Only the development banks and agencies additionally showed very strong support for market-based mechanisms.

Regarding the possible benefits that strong partnerships are able to produce, respondents strived to reap the same benefits, yet their order of preference varied slightly. Overall, improving electricity access, stimulating local economic development and improving environmental quality were named as the most important benefits. Yet, promoting local and foreign investment and trade, which was an issue very strongly supported by public stakeholders, did not find much backing from other respondents.

Practically all respondents concurred that the most important contributions the private and industry sectors could make to strong and successful partnerships consisted in providing access to capital and bringing in their managerial experience as well as their more effective use of resources. Every stakeholder very strongly agreed on the importance of these contributions, with the development banks and agencies showing a remarkably strong support.

As far as the contributions from the public side are concerned, stakeholders again agreed on the most important aspects. Across all groups, survey participants identified the ability of the public side to frame and implement a low-risk, predictable and enabling legal and regulatory environment as the top contribution. Their ability to introduce incentives when necessary to move partnerships and projects forward was also considered paramount. The only noticeable difference between the stakeholder groups consisted in their assessment concerning the public side's role in establishing detailed standards for different operative project-related issues. Only the public respondents deemed this a substantial contribution.

Concerning the types of financing that are most effective in promoting partnerships in the electricity sector, some differences became apparent. Loan guarantees, for example, were seen as suitable ways of financing partnerships by development banks and private stakeholders. The public sector, however, did not share this view, as it is often obliged to step in if the loans cannot be paid back. Also, the effectiveness of grants was assessed differently. While public stakeholders were favourable toward this financing instrument, their private counterparts were not especially supportive of this type of financing, and respondents in the third group outright rejected grants as a suitable way of financing projects. However, all groups strongly backed PPAs as the most effective way to finance electricity partnerships and projects.

Overall, the survey results show few impediments preventing strong cooperation between public and private stakeholders as the electricity sector works to increase electricity access and promote the deployment of sustainable electricity technology. Most respondents shared very similar values, interests and goals when embarking on a partnership. This, of course, is a very beneficial condition for starting a joint initiative.

However, this beneficial starting point is not a guarantee of long-term success. As we have seen, differences exist, especially over the priority of certain issues, and in the field of financing. Moreover, differences regarding the basic motivation will often be latent —like providing a public good vs. profitability. Overcoming these differences is always possible, yet they come with certain costs, which is why partnerships of any kind should always yield an added value that would otherwise not materialize. The Global Sustainable Electricity Partnership and UN-Energy, among others, are deeply convinced that working together on a partnership basis can unlock the full potential of all parties involved. For those stakeholders determined to form or support successful partnerships between public and private sectors, some recommendations are formulated in this report.

Review of Recommendations

The analysis of the survey results and the evaluation of the interests and values of the different stakeholder groups have shown that great potential for cooperation does exist. Moreover, the distinctive characteristics of partnerships between public and private stakeholders seem to offer ample opportunities for collaboration. Partnerships between public and private stakeholders can be implemented in a variety of ways, and in this manner offer ample flexibility (for some examples see case studies in this report as well as on www.e8casestudies.org). Sometimes, nonetheless, facilitators are needed to initiate or jumpstart such a partnership. Development banks and agencies, as well as specialized NGOs with a high level of competence in the field, play a crucial role in this respect.

Although the benefits of PPPs are well known and many stakeholders on the public and private side are willing to cooperate to approach the challenges of energy poverty and climate change, sometimes partnerships fail or never materialize. However, chances for setting up a successful partnership increase dramatically if the right policy framework is in place and some basic principles are considered.

The purpose of the last survey report was to identify the most effective and meaningful best practices of partnerships between public and private stakeholders to support the global deployment of low and zero-emitting electricity technologies. With the information gathered by the survey, the Global Sustainable Electricity Partnership and UN-Energy identified policy and project characteristics that establish an attractive atmosphere for PPPs. A number of recommendations were derived from the perspectives and experiences shared by survey respondents.

These recommendations were based on data that, for the most part, reflected the perspective of the private and industry sector. By including responses of public-side stakeholders as well as development banks and agencies, a more balanced dataset was obtained. Therefore, it seems appropriate to closely examine the past recommendations and check if they still apply or need to be amended with regard to the responses of the new stakeholder groups.

POLICY RECOMMENDATIONS

1. & 2. Recommendations on policy elements to promote the deployment of low-carbon and zero-emitting technologies and on mechanisms to establish policies that promote PPPs

Establish a formal national energy development plan with a strong and stable legislative framework and a clearly defined public-private partnership strategy. Moreover, provide assured cost recovery and profit potential for investors by creating national energy plans backed by legislation and regulation that establish a commitment to the promotion of low-carbon and zero-emitting technologies.

These recommendations are mostly in line with the responses of public and private stakeholders as well as those from development banks and agencies. While establishing an energy development plan through national legislation is in line with public and private stakeholders' preferences, taking into account cost recovery and profit potential addresses one of the private sector's main interests. Market-based mechanisms, like those endorsed by development banks and agencies, are compatible with this approach, although they found no strong backing with public and private respondents. Furthermore, regional and international agreements may complement national legislation and regulation in certain cases.

3. Recommendation on policy options that best support public-private partnership in research, development, demonstration and deployment of projects

Provide stable, sufficient funding for RDD&D of a wide range of emerging clean electricity technologies. As RDD&D may be very capital intensive, especially for the deployment phase, PPPs will have to change the way RDD&D is financed in order to lead the way toward decarbonizing electricity supply.

RDD&D projects can help bring new tailor-made solutions for specific requirements in particular regions. Although all stakeholder groups do recognize the importance of RDD&D, they assigned different priorities to related issues. Support for RDD&D projects may sometimes be difficult to garner from all parties given the high costs usually linked to these types of projects. However, it may be beneficial for all stakeholders to get involved, as all can potentially gain from successful RDD&D and the subsequent implementation of new tested concepts. International cooperation on this front may provide a unique platform for knowledge sharing through the setting up of international PPPs on technology transfer.

EFFECTIVE PUBLIC-PRIVATE PARTNERSHIP RECOMMENDATIONS

4. Recommendation on the benefits of strong public-private partnership for electricity technology deployment

Maximize the benefits brought to communities from new and expanded electrification that is sustainable and environmentally conscious. These PPPs can help raise standards of living and support the economic and social development of communities through improved access to electricity.

After taking into account the responses of all three stakeholder groups it is safe to say that the recommendation still applies. Yet, for the sake of completeness, the benefits of local and foreign investment, as well as local and global environmental improvements have to be considered in this recommendation.

5. Recommendation on the private sector's contributions to strong partnerships

Optimize the private sector's ability to use resources effectively, to apply many financing alternatives for electricity projects and to design, construct, and operate them.

Based on the survey results, the private sector's access to capital, as well as its experience in using resources more effectively and in designing and managing low-carbon technology projects are viewed as important contributions from the private sector.

6. Recommendation on the public sector's contributions to strong partnerships

Set electricity development goals and timetables for long-term technology deployment programs under national energy plans. One of the key strengths of the public sector is the ability to develop long-term, low-risk policies that can entice financial contributors and project developers to invest in a project, taking into account the particular needs and potentials of a specific region.

The results of this survey confirmed the recommendation issued last year on the public sector's contribution to strong PPPs. In addition, the recommendation also considers the local knowledge public stakeholders are able to bring into a partnership. This local knowledge, the ability to take into account the particular needs and potentials of a specific region, as well as the capability to factor this knowledge into tailor-made long-term policies and energy plans, together represent the most valuable way the public side can contribute to a partnership.

For long-term development to be successful, private and industry stakeholders should ensure that technology and know-how are transferred to their public partners.

7. Recommendation on the factors contributing to effective partnerships

Sustain strong partnerships with effective communication, well-defined roles and responsibilities, and continuous commitment. Effective partnerships keep expectations from all parties constantly in check.

Mirroring last year's report, this is still important after reviewing the responses of all three stakeholder groups. In addition, the recommendation now stipulates that for partnerships to be effective the right policy framework needs to be in place and expectations should be expressed clearly. Moreover, the long-term success of a partnership or project can be further ensured through human capacity-building measures that transfer the knowledge of the project (design, operations and management) between partners and to the local communities.

FINANCING RECOMMENDATIONS

8. Recommendation on financing for promoting and deploying efficient low-carbon and zero-emitting technologies and infrastructure expansion

Minimize the private sector's risk by using PPAs to provide the greatest certainty for recovery of long-term investment and create favourable conditions for profit.

Because of the large investments and financial risks associated with projects aiming to deploy low-carbon and zero-emitting technologies in threshold and developing countries, the previous report recommended securing long-term income streams. Using PPAs gives the greatest certainty regarding long-term investments.

After considering the responses of all stakeholder groups, this eighth recommendation can also be reaffirmed. All groups rated PPAs as exceptionally effective in promoting partnerships to implement low-carbon and zero-emitting technologies. Private stakeholders and development banks especially showed strong support for PPAs.

However, it should be noted that other financing options with strong backing exist. Which specific option is used for a given partnership or project should be decided jointly by all partners, but should focus on securing long-term income streams.

FURTHER CONTRIBUTIONS TO EFFECTIVE PUBLIC-PRIVATE PARTNERSHIPS

Partnerships can play a substantial role in scaling up access to sustainable electricity, thereby making an overall contribution to the sustainable development of threshold and developing countries. Earlier in 2012, UN-Secretary General Ban Ki-moon declared two Millennium Development Goals achieved ahead of time: halving the proportion of people without sustainable access to safe drinking water and halving the proportion of people living in extreme poverty. The Secretary-General stressed that partnerships between all relevant public and private stakeholders played an essential part in reaching these MDGs before 2015. He also noted that partnerships work and are still necessary to meet the challenges of sustainable development, but that the full engagement of all sectors and actors will be critical. "When we pull together, we can achieve great things," he declared.⁹

The aforementioned recommendations can contribute to initiating and sustaining successful partnerships in the long run. The Global Sustainable Electricity Partnership and UN-Energy actively support and promote cooperation between public and private stakeholders to expand electricity access and increase the deployment of low-carbon and zero-emitting electricity technologies. However, stakeholders sometimes face problems and challenges that are beyond their influence, impeding the development of partnerships.

9. See Message from the UN-Secretary General, *Unwise Use of Water Will Result in Persisting Hunger, Drought, Political Instability*, Secretary-General Warns in Observance Message, UN-Press Release SG/SM/14163-ENV/DEV/1262-OBV/1075, 15.03.2012, available online at <http://www.un.org/News/Press/docs/2012/sgsm14163.doc.htm>, 23.03.2012; see also Concerted global efforts have led to great strides against extreme poverty, UN News Centre, 08.03.2012, available online at <http://www.un.org/apps/news/story.asp?NewsID=41488&Cr=mdg&Cr1=>, 23.03.2012.

The Global Sustainable Electricity Partnership wants to be part of the solution. That is why survey participants were invited to share the kind of support they might possibly need to build successful PPPs. Interestingly, few differences between the three stakeholder groups emerged and the main issues could be classified into five categories:

Knowledge Sharing

Respondents agreed that one of the most effective ways of supporting strong partnerships was by acting as a knowledge base. Whereas simply promoting PPPs in the electricity sector is worthwhile, sharing roadmaps on how to create successful partnerships, identifying key success elements and implementing a “library” of global best practices is even better. Helping public stakeholders to simplify regulatory processes and establishing internationally proven standards would greatly ease the task of deploying and financing projects in many cases.

Moreover, providing access to information on new technologies as well as advising on the most effective policy and regulatory frameworks worldwide would enable stakeholders willing to build partnerships to move forward.

Human Capacity Building

Capacity building was identified by all survey respondents as key for long-term success. Accordingly, they stressed the importance of encouraging and facilitating sharing of the industry’s managerial experience and technical expertise with local public and private partners. It is important to team up with industry, government and financial stakeholders, as well as bring educational institutions like universities on board.

Moreover, they point to the importance of supporting the development of specific expertise, helping local specialists deepen their understanding of current issues and expanding their skills. This could be supported, for example, by offering grants for people and organizations from threshold and developing countries that would then be able to disseminate their acquired knowledge in their home countries.

Guidance with Financing Issues

Financing issues emerged as one of the key difficulties and possible pitfalls when trying to initiate a partnership. It is thus not surprising that stakeholders bring this issue up when looking for support. Stakeholders made it clear that they would welcome support in locating potential partners to finance specific projects. Therefore, bringing partners together, helping them identify the right tools, as well as adequate international financing programs and mechanisms, could make a real difference. Sometimes, just teaming up for a specific partnership can add to the credibility of a project by adding a “seal of approval” that would also help in finding other partners and financing options.

Moderator

Respondents emphasized that they need a non-biased global player acting as a mediator or moderator between public and private stakeholders as well as development banks and agencies—in short: building a network of relevant stakeholders. Promoting exchange between relevant stakeholders, fostering collaboration with high level institutions, and communicating on an international level on policy issues as well as new technologies would also be key functions. A moderator should carry the international discussion on important issues forward, bring the relevant players together, promote forums with industry experts, help build partnerships and networks, and raise awareness of upcoming developments and trends.

Projects

No one can bring electricity to the entire population and solve the planet’s environmental problems on his own. Nonetheless, there is no more accessible way of showing how to improve access to electricity than by actually implementing a project on site. Respondents appreciate the support to develop, deploy and manage demonstration or pilot projects that offer tailor-made solutions for particular problems and environments. The projects should be replicable, and it would be of utmost importance to show partners how to replicate success for themselves on further projects—cutting short otherwise long development times. They also expressed the need for assistance to strengthen the monitoring process for assuring long-term success of projects.

The issues brought up by survey participants correctly point to the many challenges faced by stakeholders willing to join partnerships. For its part, the Global Sustainable Electricity Partnership has been working for two decades along with public and private stakeholders, as well as development banks and other organizations. The Partnership already offers a broad range of initiatives and activities that address some of the issues listed above. Among other things the Partnership:

- Collaborates with international organizations on technology
- Teams up with the United Nations and other major international organizations to create initiatives such as the *Strengthening Public-Private Partnerships* initiative
- Supports future academics and practitioners of sustainable energy development from developing and emerging countries by granting scholarships
- Implements demonstration projects with tailor-made sustainable electricity technologies in developing and emerging countries
- Implements human capacity-building workshops worldwide on key issues like financing, improving energy efficiency, operation and management of renewable energy systems, etc.

The Global Sustainable Electricity Partnership, by implementing small sustainable power projects for demonstration and conducting human capacity-building workshops, is constantly engaging in joint projects with local stakeholders from the public sector and civil society. The Partnership is ready to continue playing an active role in global electricity issues and to make its contribution to strengthening cooperation between public and private stakeholders to accelerate the deployment of sustainable electricity technology and increase access to electricity.

Conclusion

Access to low-carbon and zero-emitting electricity is critical for achieving sustainable development. It can simultaneously create significant economic growth, as well as improve social conditions and reduce emissions. Yet access to electricity remains a challenge in vast regions of the world, a fact which underlines the importance and timeliness of the United Nations Secretary-General's initiative on *Sustainable Energy for All*. There is an urgent need to scale up access to energy, particularly sustainable electricity, and it seems clear that cooperation among all stakeholders will be necessary, as neither the public nor the private sectors nor civil society can ensure this alone.

Effective public-private partnerships are critical in addressing universal access to energy services and achieving sustainable energy development. The Global Sustainable Electricity Partnership and UN-Energy are committed to fostering strong PPPs through the *Strengthening Public-Private Partnerships* initiative. The results of the survey demonstrated that the major stakeholders agree on the most important elements that can make PPPs thrive, and the recommendations offered in the report present the essentials for building successful PPP business models.

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	Independent Power Producers Forum			
	Indoasian			

**ABOUT THE GLOBAL SUSTAINABLE
ELECTRICITY PARTNERSHIP:**

Created in the wake of the 1992 Rio Summit, the Global Sustainable Electricity Partnership, formerly e_g, is a non-profit international organization, composed of the top world leading electricity companies, whose mission is to play an active role in the international debate on global electricity issues and to promote sustainable energy development through electricity sector projects and human capacity-building activities in developing and emerging nations worldwide.

For more information visit:
www.globalelectricity.org.

ABOUT UN-ENERGY:

UN-Energy was initiated as a mechanism to promote coherence within the United Nations family of organizations in the energy field and to develop increased collective engagement between the United Nations and other key external stakeholders. Its envisaged role was to increase the sharing of information, encourage and facilitate joint programming and develop action-oriented approaches to coordination. It was hoped that it would develop into a system-wide network open to all and a mechanism by which a range of organizational actors could work with the United Nations to ensure a more coherent approach to addressing energy issues.

For more information visit:
www.un-energy.org.

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