



Alliance for
Rural
Electrification

Financing Schemes for Rural Electrification



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ECREEE Regional Forum
on the ECOWAS Solar Energy Initiative

19 October 2010

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Index

1. The compromises from different stakeholders
2. Financial Schemes
1. Conclusions

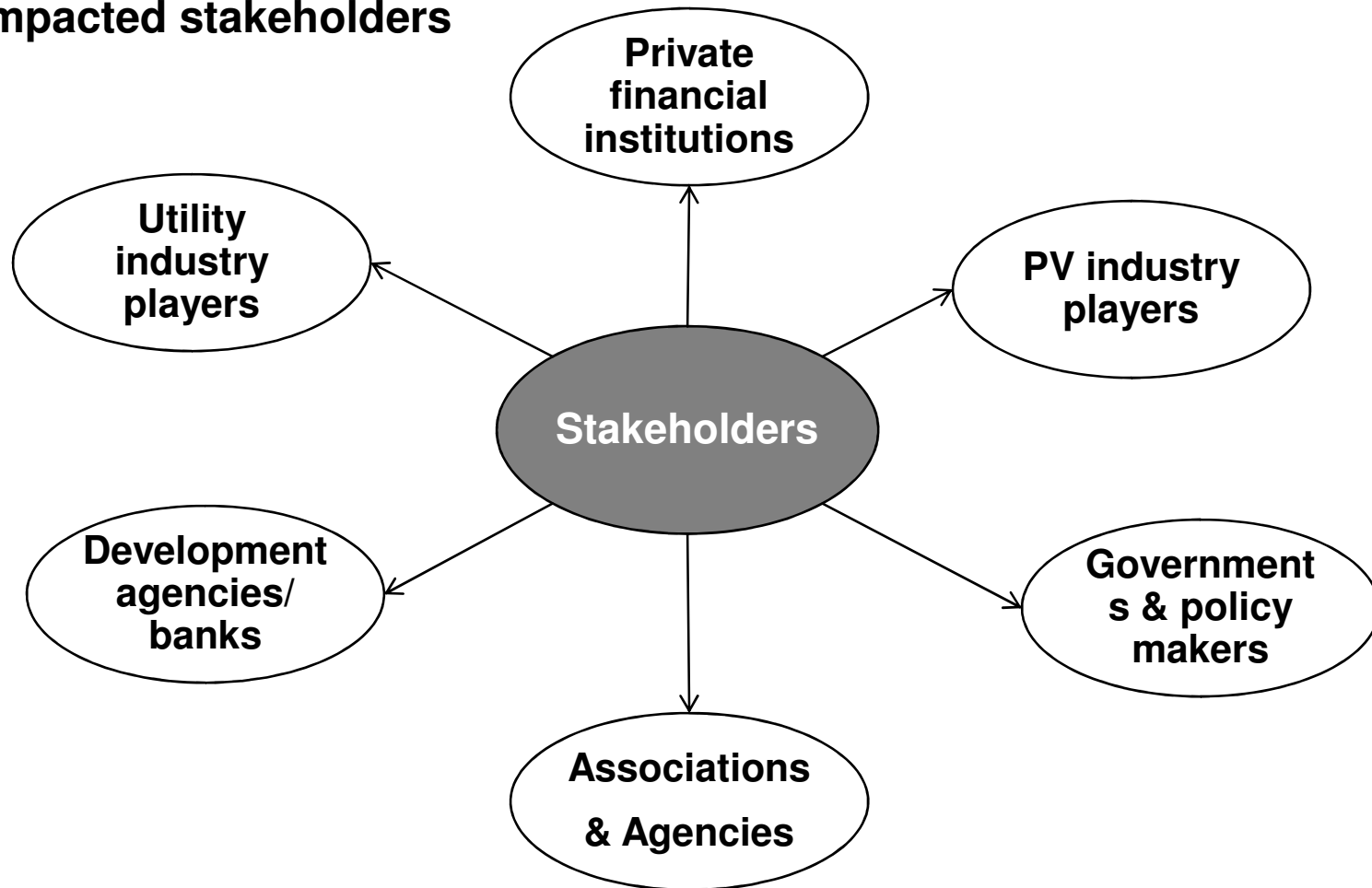
The compromises from different stakeholders



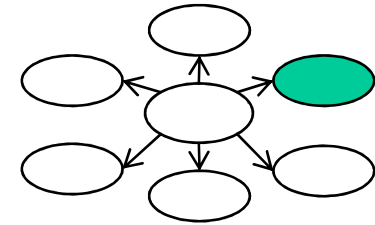
- The financing or the development of any financial model designed to promote the deployment of PV or any other RES, depends absolutely on the country conditions where many stakeholders have a relevant role.
- The money, public or private, needs favourable and stable conditions to be invested, together with a global knowledge and understanding of the technology and the characteristics of the investment.

The expected significant development of PV in the near future is linked to different stakeholders

Impacted stakeholders



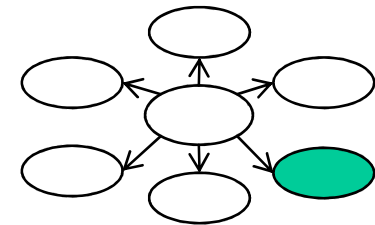
PV industry players can expect tremendous market growth outside EU and US and should prepare for it



- Decide on willingness to enter/ develop in emerging markets
- Assess capabilities to enter/ develop in emerging markets
 - Launch stand-alone or joint-venture/ partnership with local companies and official institutions
 - Develop new Product/ service offering
 - Reach-out to utilities, state actors and policy makers
 - Network and leverage associations and opportunities offered by business organizations
- Assess production footprint relocation opportunities for cost reductions
- Keep strong R&D commitment to maintain the dynamic cost reduction momentum
- Develop sales and marketing activities to secure the effective market uptake as soon as PV competitiveness is reached

Policymakers, governments, and regulators have to integrate PV in their energy plans and policies

- Be informed and updated on PV dynamics in terms of cost/performance development and market potential
- Integrate PV in energy plan and mix taking all PV benefits⁽¹⁾ into account:

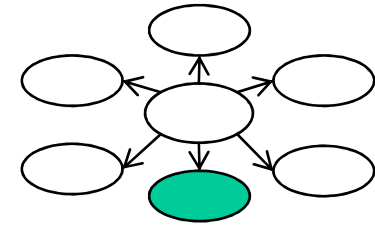


<i>High impact benefit</i>	<i>Medium impact benefit</i>	<i>Low impact benefit</i>
<ul style="list-style-type: none"> • Avoided CO2 emissions • Avoided gas imports • Increased employment • Increased innovation • Increased GDP • Policy fulfillment 	<ul style="list-style-type: none"> • Rural development • Decreased market concentration • Electricity price stability • Decreased grid losses • Avoided subsidies for conventional power • Peak power/Merit order effect 	<ul style="list-style-type: none"> • Increased grid stability • Avoided SO2/ NOx emissions • Avoided Water usage • Avoided fixed power generation costs

- Set-up sustainable support schemes and de-bottleneck administrative procedures
- Plan grid investments and upgrades (smart-grid, storage capabilities)
- Seek partnerships with private sector, utilities, research community and business organizations
- Develop trainings and education programs to supply the required skilled workforce

(1) Applicability and potential of listed benefits may vary by country

Associations and agencies have an important communication and coordination role to play

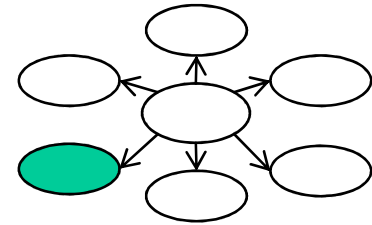


- Increase market transparency
- Support policy makers to define sustainable support schemes and manage the policy transition to competitive PV markets
- Support local PV industry
- Ensure coordination and interaction between all major PV stakeholders

Development agencies and banks should develop awareness in developing countries and provide assistance



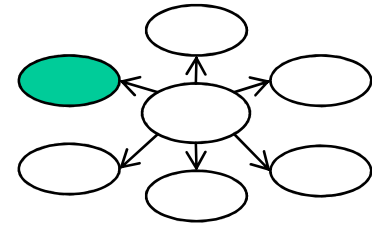
- Be informed and updated on PV dynamics in terms of cost/performance development and market potential
- Help to overcome outdated beliefs (expensive and unreliable) about PV in developing countries
- Integrate all PV benefits in rational for its development in the developing countries
- Support and incentivize developing countries to reduce emissions
- Provide technical and financial assistance
- Seek partnerships with private sector, utilities, research community and business organizations
- Promote large demonstration projects



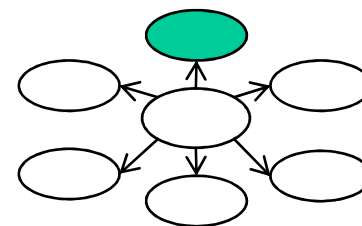
Utility industry players have to take a proactive role, getting prepared for when the market takes off



- Understand the PV development as an opportunity to both:
 - Become proactive investors and / or marketers to maintain a generation market share and satisfy clients' demands
 - Penetrate new markets with no current generation assets or end-user relationship
- Reach-out proactively to regulators and integrate them into your resource planning
- Start now developing competitive market positions for when the market takes off
- Team-up with experienced project developers to learn from projects with a massive PV deployment
- Invest in the grid and prepare yourself for decentralized electricity generation



Private financial institutions can benefit from new investment types in the sunbelt countries



- Benefit from blending with soft loans from development institutions and climate change funds
- Team-up with the private sector, project developers, development institutions, utility companies and policy makers
- Leverage CDM complementary resources



The IEA estimates that developing and transition countries as a group face the following cumulative investment requirements in their energy sectors: **US\$9.6 trillion in the period 2001 to 2030**. Private investments will be needed to reach these levels.

How to attract investments from the private sector and compensate for the limited capacity of public donors? = **Incentives which spur self-organization of villages and private investment.**

How to reinforce the sustainability of the projects and to ensure their functioning over a long period of time? = **Sustainable financing models which safeguard maintenance and long term use.**

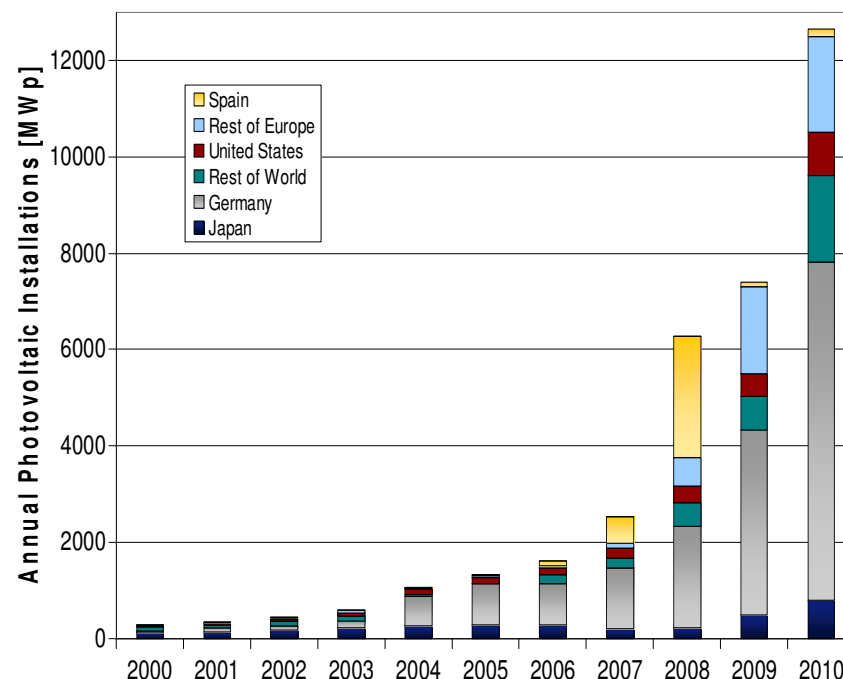
Financing schemes

Feed in Tariff:

Across Europe, the most effective tool for encouraging renewable investment has been the FIT: The scheme ensures investor security, is simple to administrate, is cost effective and can be flexibly applied to different/many technologies.

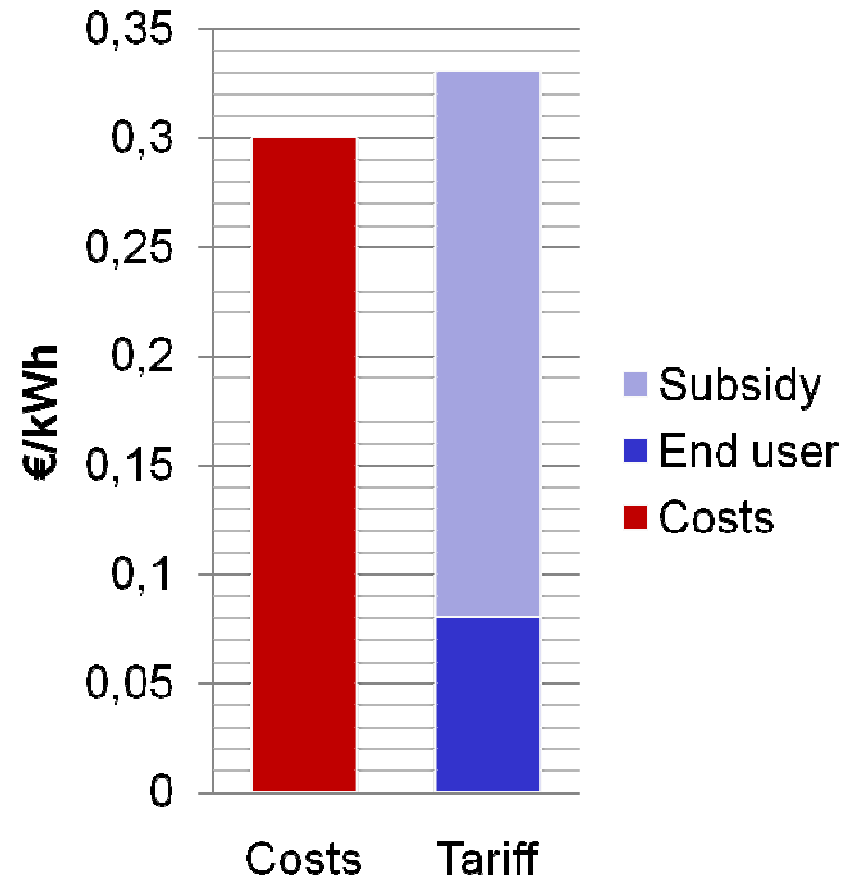
Output Based Aid:

Development cooperation increasingly interested in adopting out-put based financing mechanisms – funds allocated on the basis of project achievements. Previous projects have focused on out-put as a product of village connections. This may maximise incentive for connections but may lead to overstretch of systems and does not protect their continued operation.



Regulated Purchase Tariff: The principle

- Based on the FiT & Output based aid, adapted to off/mini-grid.
- Upfront costs of system is spread over a fixed period.
- Consumers pay fixed tariff.
- Ongoing tariff payments are subsidised (by national government or supported by international development finance) to make up the full costs.
- Renewable IPP recovers costs plus marginal profits over the fixed period.
- Long-term contract obliges company to *maintain* the system (repairs, replacements etc).



➤ **RPT advantages:**

- Appropriate for supporting larger mini-grids;
- The systems will continue to work because maintenance is guaranteed;
- Funding for the long-term encourages equity finance and technical investments;
- High start up costs eliminated when company retains ownership;
- Incentives can still be made for connections through an increase of power;
- Will support productive use of power;
- Affordable for local consumers;
- Convenience for customers as installation and repairs are taken care of;

➤ **BUT several key issues will have to be addressed:**

- The necessity to secure the RPT over a fixed period of time;
- The political guarantee that the system will be stable over the fixed period of time
- International donors and investors may need to assist by supporting/providing guarantees for these subsidies (BUT “market oriented subsidies”)

A key step: From “energy as a product” to “energy as a service”

- *(selling and installing a system)* to an approach based on “energy as a service” *(installing, maintaining and operating a system)*, where companies assume the management of the projects.
- A long term relationship between companies and contracting authorities would spur the contractor to maintain and increase its investment and to develop added services.
- **Benefits**
 - Long-term approach: the system will continue working properly because maintenance is guaranteed.
 - Convenience for customers: there is no charge for repairs and customers do not have to install the system themselves.
 - Transmission of know-how on how companies work.

Expected from developed economies, donors and investors:

- Communication and collaboration with DC's to raise awareness on the potential of RES as a major tool for sustainable development. **Access to energy especially with RET's should be one of the highest priority for African countries.**
- **Strengthening the presence of the industry within the global rural electrification dialogue** in order to overcome the technological and financial problems currently faced on the field. This has to be done from the policy making/programming level.
- **Support to R&D on rural electrification.** The private sector has supported the majority of efforts in this sector and should be encouraged to improve reliability of certain systems and further bring down the costs. **Demonstration projects** intended for widespread adaptation under development programs should also be supported.
- **Of course:** Increased funding for rural electrification but in the most « market oriented » way...



Expected from developing countries:

- Appropriate support frameworks to **internalise social and environmental costs** and to remove market distortions, including the **restructuring of taxes and the phasing out of harmful subsidies**
- A number of **trade barriers** such as the abuse of monopolistic rights, high tax or custom duties or burdensome administrative procedures, should be addressed to open access to off grid markets;
- **Government financial and non-financial incentives** are necessary to increase the attractiveness of investing in renewable energy technologies.
- **Regulations to reassure the private sector** of the extent of its legal legitimacy to operate in the energy field and to ensure the safety and protect the rights of consumers of electricity

Conclusions: Political/Institutional dimension



Expected from developing countries 2:

- **Reliable policy and legal frameworks should be developed** taking into consideration the significant potential role of renewable energies in this continent. Energy planning must include ALL options, including renewable.
- Define renewable energy targets / **compulsory quotas** for RE production within their energy mix.
- Choice between grid extension and off-grid solutions should be based on a comprehensive **life cycle analysis**. Both strategies, just in case are perfectly compatible.

Thank you!



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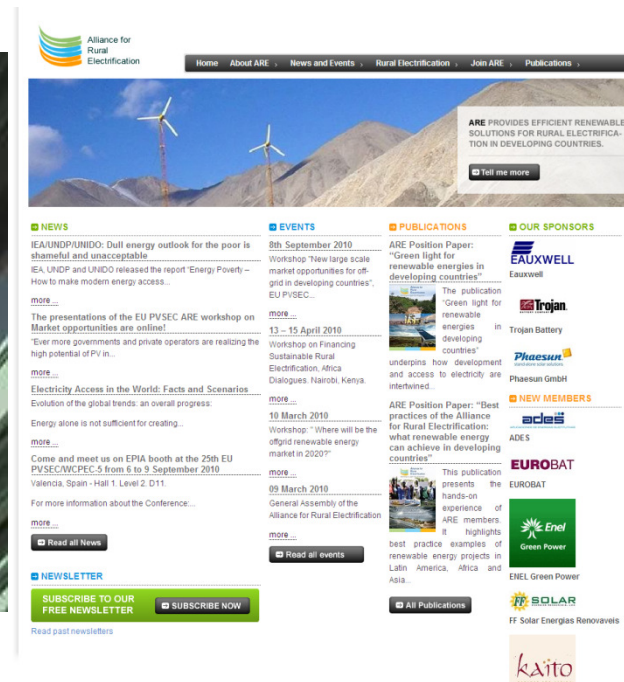


Photo credit: ARE members

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