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Minutes of the workshop

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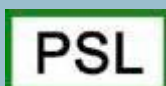
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Solar Photo Voltaic Development in Indonesia: Going to Sustainable Model

Proceeding of the *National Workshop*
Jakarta, 18 June 2008

July 2008





Intelligent Energy  Europe

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Opening Remarks

Ladies and gentlemen, the distinguished participants of the workshop, First of all, on behalf of the Yayasan Bina Usaha Lingkungan (YBUL), I would like to welcome you all to this workshop on “Solar PV Development, Going to a More Sustainable Model”.

Secondly, I also would like to thank **Planet Finance** and **Trans Energic** for making this workshop possible so that we all can be here to discuss this important and challenging issue.

As described in the terms of reference, the goal of this workshop is to raise awareness of actors in the micro finance and energy sector on the advantages of collaboration in solar PV development in Indonesia. Thus, hopefully by the end of the workshop we all can define a workable framework for the Indonesia solar industry as well as a workable scheme for going to a sustainable model possible.

Within the context of energy and electricity crisis, solar PV has become one of promising options to provide electrification to rural communities who do not have electricity. These rural communities consist of about 82% of the overall communities who do not enjoy the luxury of having electricity from PLN. In this large scale of a problem, solar PV as a new technology, may become a viable option to help resolve the rural communities' electricity needs. However, we are in the opinion that introduction of new technology should be accompanied with sufficient services to ensure its sustainable functions.

In addition to that, we also believe that the new technology should be provided to the ones who need. This “need” could also be perceived as willingness to sacrifice something in return, for examples: money, times, efforts, activities like maintenance, et cetera. Only by quantifying these willingness to sacrifice does a scheme can be developed to help maintain the technology functions.

Such a scheme, for example building financial products, local skills and infrastructure and link microfinance services to the solar PV, may ensure the long-term success of rural electrification and development program.

In this workshop, there will be prominent speakers in their own fields who will share knowledge and experiences with all of us, so that cross enriching process will take place. We hope that this approach will help us all to come up with new ideas and breakthroughs to improve the on-going rural electrification programs, especially through sustainable solar PV programs.

Wish you all the best success in this workshop.

Executive Summary

Workshop on *Solar PV Development; Going to a More Sustainable Model* was held as part of RENDEV (*RE*nforcing Provision of Sustainable *EN*ergy services in Bangladesh and Indonesia for Poverty Alleviation and Sustainable *DE*velopment) project activities.

Established amicably through collaboration of Planet Finance and Intelligent Energy Europe, together with Trans Energy, and IT Power, and Yayasan Bina Usaha Lingkungan (YBUL) as the local partner in Indonesia, the project intends to increase the availability and usage of a decentralized rural electrification service, through linking up simultaneously microfinance mechanisms, solar energy technology with small and medium size enterprise development.

More than 40 key players in renewable energy fields participated in the workshop established in Kencana Room Sari Pan Pacific Hotel, Jakarta at June 18th, 2008. They are from Government Bodies: DGEEU-Ministry of Energy and Mineral Resource, PLN (national electricity company), BP2TE and PTKKE BPPT (Agency for Research and Application of Technology), financial institutions: ADB, Bank BNI, Bank Danamon, Non Government entities: Ekonid, Habitat, Pelangi, IIEE, WWF Indonesia, Private sectors: Citrakaton Dwitama, Sundaya Indonesia, Sharp Electronic Indonesia, Total ESP, Guna Electro, Suar Intermuda, LEN Industry, and Gema, and also from media: AN-TV.

The workshop is aimed to raise awareness of actors in the micro finance and energy sector on the advantages of collaboration in solar PV development in Indonesia and further, to define a workable framework for the Indonesia solar industry as well as a workable scheme for going to a sustainable model.

Access to energy services can truly transform peoples' lives in a way that cuts across all development issues. Nonetheless, energy and electricity access for many of Indonesian citizen remains an issue.

Within the context of this crisis, solar PV has become one of promising options to provide electrification for about 41.22 % Indonesian people who do not have electricity access especially rural communities in remote areas. In the magnitude of the problem, solar PV may become a viable option. However, introduction of new technology should be accompanied with sufficient services to ensure its sustainable functions. Access to financing aspect is identified as a significant barrier for smoothing out renewable energy progress in Indonesia.

The forum acknowledges that PV market in Indonesia is potentially high. The Government of Indonesia is performing PV programs, i.e. Rural PV Program for communities in remote areas - on social basis, and Urban PV Program, where people are encouraged to utilize PV - on a (fully) commercial basis.

In line with development of PV implementation, through these programs, the PV market is expected to grow to the scale that may be feasible for industrialization, and thus as it has been pledged in Solar PV Roadmap in Strategic Planning on National Energy Development, Indonesia will enter the modules manufacturing phase by 2017.

Any of PV implementation schemes with financing options developed by other players i.e. NGO, private sectors, as well as the financial institutions

can be implemented aside from the Government projects remote areas. Information on which area of the past and present Government Projects (from DGEEU Ministry of Energy and Mineral resources, Ministry of Marine and Fisheries, BPPT, etc) is being collected and will be available at DGEEU.

Existing PV projects are implemented through various financing schemes. First, DGEEU Projects through social basis scheme. Secondly, BPPT project through segmentation of beneficiaries. BPPT segments are Segment 1, for under developed area (GOI provides SHS, transportation to site and installation); Segment 2, for the area where the consumers are able to buy SHS by installment for 10 years (GOI contributes for training, transportation fee, installation and interest rate. The consumers have to pay a down payment for balance of system. The SHS is provided by GOI); Segment 3, the customers are able to pay the installed system by installment within 1-3 years. The SHS will be marketed by dealers (private companies). And third, projects that are potentially supported by Finance or microfinance institutions (for example BRI Bank, Danamon Bank) provided the project is economically feasible or profitable.

There are several options for financing scheme as already implemented in other developing countries, they are the Two Hands Model, a lesson learnt from Sri Lanka, that may fit rather easily into the Indonesian situation; The One Hand Model, a lesson learnt from Bangladesh that will call for a large size company and may be difficult to apply due to investment atmosphere nowadays; The Utility Model, a lesson learnt from Morocco, which is in the case of Indonesia, to be incorporated with the utility, that may take a long procedure with PLN.

Aside from those 3 models, there is also possibility to develop financing scheme with existing credit system for consumer goods which is working well in Indonesia, for example Columbia on electronics stuff and FIF for motorcycle, however there should be improvements on the scheme to be applied on PV system.

Micro financing implementation requires training and capacity building in terms of how to provide services, to introduce and to assist the user to choose the best financing scheme for PV purchasing, to collect fee, etc.

For PV development, there is a possibility of providing loan without collateral from bank as long as the project size is economically feasible and profitable (for example from Danamon; up to 10-15 million rupiah).

In determining the "Poorest of the poor" regardless the criteria defined by the Government (people in remote areas in which the village has no micro hydro potential as well as economic potential that can be developed further, but there is commitment from them to maintain and manage the system), may use criteria of BRI i.e. those who are not eligible to be awarded credit by banks.

Role of BPPT is strongly expected especially in standardization of all PV system such as SHS, Hybrid system, etc through SNI (Standar Nasional Indonesia/ Indonesia National Standard).

There is a need of enhancement of Local Governments role in PV development, i.e. determining the location where the PV system will be installed, facilitating the community to form an institution to manage (operation and maintenance) the PV system, providing training to the community (if necessary with assistance from consultants), and by conducting regular monitoring of PV system.

Minutes of Meeting

Program/ Speaker/ Title	Note
Opening 1 Phillippe Gaeng- Planet Finance	<ul style="list-style-type: none"> • Welcome to all participant • The workshop is held by YBUL as a part of 2 years cooperation between YBUL and Planet Finance • Sufficient technology should be supported
Opening 2 Agus Widiyanto- YBUL	<ul style="list-style-type: none"> • Within the context of energy and electricity crisis, solar PV has become one of promising options to provide electrification to rural communities who do not have electricity. Introduction of new technology should be accompanied with sufficient services to ensure its sustainable functions. • The new technology should be provided to the ones who need. This “need” could also be perceived as willingness to sacrifice something in return, for examples: money, times, efforts, activities like maintenance, et cetera. Only by quantifying this willingness to sacrifice does a scheme can be developed to help maintain the technology functions. • Such a scheme, for example building financial products, local skills and infrastructure and link microfinance services to the solar PV, may ensure the long-term success of rural electrification and development program. • It is expected that this workshop will come up with new ideas and breakthroughs to improve the on-going rural electrification programs, especially through sustainable solar PV programs.
Presentation 1 Ratna Ariati DGEEU “SOLAR PV DEVELOPMENT IN INDONESIA”	<ul style="list-style-type: none"> • OC asked DGEEU to speak about development solar PV in rural area through commercial approach, but DGEEU don’t share this opinion as DGEEU assume that commercial approach will only work in urban or wealthy enough rural area, not in remote (rural) area which is targeted to be electrified by solar PV, due to their very low purchasing ability. • DGEEU has been working on Solar PV development by <ol style="list-style-type: none"> 1. facilitating and issuing regulation (Energy Law No. 30/2007, Presidential Decree No. 5/2006 on National Energy Policy which targeting Reduction of energy elasticity to less than 1 and Reduction of oil share and increase use of the renewable energy to 15% as a part of Energy Mix policy, both by 2025, Minister of Energy and Mineral Resources Decree No. 1122K/30/MEM/2002 and No. 002/2006 on Small and Medium Scale Renewable Electricity Generation Guidance 2. Determining Solar PV Roadmap (within Strategic Planning on National Energy Development) 3. Solar PV development Programs for Rural area (fully government grant), and for urban area (fully commercial approach) • DGEEU also encourage the enhancement of local government role in Solar PV development in Indonesia.
Discussion 1	<ol style="list-style-type: none"> 1. Yolanda, BNI <ul style="list-style-type: none"> - Why don’t mix/hybrid system with other RE resources i.e. wind, hydro, etc which may decrease production cost? <p><i>Yes, there is a pilot project using hybrid system, however solar PV development for rural is financed by limited fund from the Government, thus have to focus on selected areas that meet the criteria (slide 14), if urban people want to meet their electricity need</i></p>

	<p><i>with PV, then they have to purchase it.</i></p> <ul style="list-style-type: none"> - Why focus on urban for developing PV, instead of microhydro as the production cost may be lower? <i>Yes, as described in slide 14 of presentation, we prioritize electrification from the cheapest technology/production cost, depend on availability of the resource in the area, begin with hydro, wind, biomass, then PV</i> <p>2. J.C. Marcel</p> <ul style="list-style-type: none"> - Regarding the Roadmap, why put the R&D as a priority and put the manufacturing later (to 2013), while the R&D or technology of PV is already mature and not sophisticated to be implemented? <i>Yes, the technology is already mature, but to scaling it up to industrialize scale, the matter falls to the size of market that may be attractive to investor, because the PV market is not yet growing. Therefore we develop Urban PV Program, because right now, there is disincentive policy for electricity customer class R3 (above 6600 KVA), that most likely will encourage them to replace half or some parts of their electricity source with PV, instead of using grid electricity from PLN which is expensive because of that disincentive policy.</i> <i>As soon as the demand developed, the market size will be interesting to investors.</i> <p>Adjat Sudradjat:</p> <p><i>The feasibility study on possibility of industrialization of PV based on market demand in Indonesia, still recommend to import instead of manufacturing, however we shouldn't have to import all the PV package, so the price will not that high.</i></p> <ul style="list-style-type: none"> - Regarding the Urban PV Program, may refer to many publications on the website of International Energy Agency (IEA). <i>Yes, we will. Thank you for suggestion</i> <p>3. Adjat Sudradjat, BP2TE</p> <ul style="list-style-type: none"> - What is the consideration in determining 0.8 as multiplying factor in the equation of selling price of electricity yielded by small and medium plant, instead of 2 or even higher, which may be more attractive to investors? <i>The Government has a burden of subsidy for electricity, even 60,000 billion rupiah this 2008 is still not enough. Nowadays, customers of PLN only pay for about 680 rupiah while the basic generating cost (BPP) already above 1,000 rupiah per KWh. By using 0.8 as multiplying factor, the project developer of RE power plant aside from PV, has been benefited. For example in Papua, BPP almost 2,000 rupiah. Microhydro developer may sell with 1,600 per KWh (0.8 x 2,000). This formula will be the way out for keeping down, the subsidy burden of Government.</i> <i>Benefit will go to PLN, the RE developer, the Government, and people</i> <p>4. Yani Witjaksono, YBUL</p> <ul style="list-style-type: none"> - Thank you for DGEEU effort in developing Solar PV in Indonesia, as it's found that it is getting better and better, both in quantity and in services. <i>Thank you for appreciation</i> - Regardless this achievement, the sustainability of projects is being questioned due to lack of service center. How do the Government plan to cover this problem. There should be an understanding that financing is one of the most important things in solar PV
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	<p>development <i>I have no answer for this actually. However, it is also our concern. In our last meeting we discussed and agreed to invite all the stakeholder especially those in the field, who actually know about the barriers and what the most needed things to develop solar PV sustainably rather than us, in terms of need of service center and so on. We are seeking to further establish that kind of meeting, and also we are waiting for the result and recommendation of this workshop.</i></p> <ul style="list-style-type: none"> - Singapore will soon establish PV module industry, and surely the nearest target market will be Indonesia. Learning from this fact, in developing industry of PV, Government shouldn't have to worry about market demand. Government has comprehensive programs as already mentioned within presentation; it should be socialized widely, because it is not impossible that there is private sector who might be interested in investing. <i>Government never stops moving, but we do need active role and support from all stake holder especially private sector. Agree with your comment, but as far as I can see that somehow investors in Indonesia are not tough enough in taking risk in this business. That is why Government now keep focusing on building the market, but at the same time doing our job; establishing a comprehensive law and regulations, and running the Programs.</i> <p>5. Lolo Panggabean, YBUL</p> <ul style="list-style-type: none"> - So far Government is going with grant approach in electrifying rural with solar PV. However this approach for sure, can not be followed by private sector since they need a return of their investment. Would Government have an objection if this private sector come in with different approach? <i>Of course Government will have no objection, we thank instead. However, please be careful if talking about implementing a commercial approach, because our poor people even sometimes very poor and have no purchasing power. They will be our target, but the rest please do different approaches.</i> <p>6. Marie A Lutz and Tabita Malat, Total</p> <ul style="list-style-type: none"> - But how does Government define the criteria of "the poor"? Is there any mapping of targeted area according to those criteria? <i>Yes we do have the criteria. As already mentioned in presentation and we have defined where are the area as our target.</i> <p>7. Eva Wuladari, Ekonid</p> <ul style="list-style-type: none"> - I saw in several countries, there is incentive mechanism for people using solar PV for their house, like in Germany. Solar PV is implemented widely. Why don't do the same? <i>Indonesia has a subsidy mechanism for very long time and it is not easy to change it. That is why we prefer disincentive policy rather than incentive policy. Please take a look further on this things.</i>
<p>Presentation 2 Yani Witjaksono YBUL "PEMANFAATAN PEMBANGKIT LISTRIK TENAGA SURYA (PLTS) SECARA</p>	<ul style="list-style-type: none"> • Some points have to be considered in developing solar PV in Indonesia are: <ul style="list-style-type: none"> - Accessibility of information of the technology, practical handling of hardware, trouble shooting, and spare part, because consumers are people in remote area. - Affordability, because commonly the consumer have low earning capacity, in addition their income is not routine, but more to seasonally, for example; farmers, fishermen, earn during every

<p>BERKELANJUTAN” (Sustainable Utilization of Solar PV)</p>	<p>harvest period.</p> <ul style="list-style-type: none"> - Capacity requires a good training continuously. - Market efficiency, because density of the PV consumer, very low. <ul style="list-style-type: none"> • Lessons we learn from decades of solar PV development in Indonesia through Government Projects, might be crystallized into several points, i.e.: <ul style="list-style-type: none"> - Lack of sense of belonging to the PV system because they got it for free, leads to un-sustainability of the project. - The activity so far remains “project based”, after the project is taken over by PV distributor, through bidding process, short training for maintenance, and then leave without progress control. After the project is finished, the installed PV system even sometimes broken and left behind, sold, or at least not functioning anymore. - There is no certain concept for solar PV development in Indonesia established and agreed by all parties, • We might have to learn from Sri Lanka which considerably more success in this field. Even though not thoroughly successful but at least they try something new. Lesson learn fro SEED case in Sri Lanka; <ul style="list-style-type: none"> - The price is affordable, because only one third of the real price through credit scheme should be paid, while the rest two third is paid by government subsidy and grant from international donor. Therefore the consumer may install more than one module, so that they can meet their electricity needs. - The SEED as the financial counterpart, makes a pre assessment, and then come up with proposed PV distributor and suitable credit scheme - Service is getting better and better because high competition between distributors, by which the consumer satisfaction and trust is increased. - High density of costumer decrease operational and maintenance cost, and the system running well efficiently. - Sense of belonging is high as the semi commercial model is running well, and the Government only play a controlling and monitoring roles. • Financing scheme that might suitable for Indonesia is duplicating the concept of Columbia (the biggest household electronic goods credit), or concept of motorcycle credit which have been very successfully uplift rate of sales. However, technical capacity of distributor and training to user should be significantly enhanced.
<p>Presentation 3 Phillippe Gaeng Planet Finance “ONE HAND APPROACH; CASE STUDY BANGLADESH”</p>	<ul style="list-style-type: none"> • Single-hand approach in Solar PV implementation is oneof where there is one company offer credit solutions to its potential customers in order to acquire PV systems. • The company is responsible for Marketing the system, Sending its sales officers in the villages, Offering a credit, Installing the system, Training the customers, Collecting the monthly fees during the duration of the credit, and also Ensuring maintenance and spare part availability. • One good example of this approach is IDCOL Program in Bangladesh, where the typical SHS is a 50 Wp including 3 lamps. This kind of system allows very basic electricity use. Only the module is bought abroad while local manufacturers provide Charge Controllers, wires and Batteries, so the cost has been shrunk to the max.

	<ul style="list-style-type: none"> • The typical duration of the loan is 2 years, 3 years product are new and might be not promoted by Partners because of higher failure risk. • Customers are trained to the use of their system and are ensuring the basic maintenance as checking batteries distilled water level and checking CC work. • Some key success are the Size of the partners, the Quality of monitoring, Support of donors, Low cost of operation, High demand among population • This approach may be implemented in Indonesia with some adjustment i.e. by decreasing the subsidy allocated to each household; then more households can be reached by the program. • Donors usually have more money available as loans than as grants. • It is possible to adjust the subsidy to focus on poorer Households: <ul style="list-style-type: none"> - 20 % subsidy on 100 Wp - 40 % subsidy on 50 Wp - 60 % subsidy on 20 Wp
<p>Presentation 4 Jean-Christian Marcel Trans Energy “A UTILITY MODEL; PRIVATE – PUBLIC PARTNERSHIP FOR SUSTAINABLE ELECTRIFICATION IN MOROCCO”</p>	<ul style="list-style-type: none"> • Utility Model in Morocco (ONE Project) is a good example of involvement of private-public in scheme of partnership for sustainable electrification program using Solar PV. • The context is provision of rural electrification commitment and integration of Solar Energy in the national policy. • A coherent approach are <ul style="list-style-type: none"> - Enhance access to public service - Tarif equitable and adapted - Sustainable maintenance - Environment Protection (Recycling, MDG) <p>Firstly pilot projects thanks to lessons learnt for data validation (technical, sociological and economical) Bid for private operators at large scale Obligated to co-finance and to assume commercial risks Market for 60 000 clients</p> <ul style="list-style-type: none"> • 3 bids won by Tenesol, Total, EDF (the consortium named Temasol), that working on 29 PROVINCES with 60 000 clients. • PV Operator is responsible on Prospecting, Installation, Maintenance, and also Exploitation • There is also cooperation between Temasol and ONEP on Solar Pumping for rural area. • Some constrain Village eligibility are Lack of information about hydrological resources (mapping), Spread information between administrations, Contract quite “complex”, No speed for administrative decision, Exploitation, Training and capacity building needs
<p>Discussion</p>	<p>1. Budi, PT Sharp Electronic Indonesia</p> <ul style="list-style-type: none"> - Model proposed by Yani for Indonesia is using existing scheme for household stuff like Columbia or FIF for Motorcycle. PT Sharp so far has implemented this model (works with Columbia) to market their electronic products, yet not for PV system. What to explain to the Columbia, to ensure them to implement their model for PV system? <p><i>Learning from the fact found in Indonesia on development of PV since 1970s, the PV should be treated as consumer products; however, there should be progressive training on technical (installation, operation, maintenance, etc) and finance(sales, credit colleting, etc) for the Credit Officer. I am not promoting the Columbia,</i></p>

	<p><i>but the scheme is good and applicable for sustainable PV implementation.</i></p> <p>1. Sarjono, PT Sundaya Indonesia</p> <ul style="list-style-type: none"> - As comment to Philippe presentation regarding proposed subsidy scheme, if the price of PV will be subsidized, then we should give it at the same level (percentage) and let the customer decide which size of PV to buy, because in fact, people tend to buy as big as they can afford? Like the World Bank, only provide subsidy for PV up to 40 Wp, because the higher capacity only for the rich, then they offer interesting financing scheme and the customer chose which to purchase <p>3. Kholid Ahmad, BPPT</p> <ul style="list-style-type: none"> - The grid connection system in Sri Lanka as presented by Yani, is it similar with Indonesia? <i>In many places In Sri Lanka which are not yet reached by utility grid like PLN in Indonesia, PV isolated grid connection system applied. This is like the BPPT's project. The difference is that they do it by commercial approach. The production, installation, operational, and maintenance cost is paid together by grid consumer, and only customers who afford to pay is supplied by the electricity. If they don't pay 3 months consecutively, the supply is cut. This is fair, and no social problems occurred because of it.</i> - It is mentioned in presentation that the price of PV in Sri Lanka is one third paid by Government subsidy, one third from donors grant, so only one third that must be paid by customer which become affordable eventually. How come the support from donor can reach one third, while in Indonesia support from The World Bank for example, only about 2.5 USD per Wp? <i>Many donors tend to go to other countries rather than Indonesia, because in fact, the sustainability of PV projects in Indonesia still being questioned with existing development strategy. Therefore, we need to improve our system that may be more attractive for donors.</i> <p>4. Adjat Sudrajat, BP2TE</p> <ul style="list-style-type: none"> - There are actually potential support in addition to support from donors, i.e. shares from coal generator power plant, because about 5% from installed power plant investment should go for this <i>I think the problem of PV development in Indonesia is not about finance source or the amount of budget for it, but more to the implementation approach.</i>
<p>Presentation 5 Kholid Ahmad BPPT "TECHNICAL, INSTITUTIONAL, AND FINANCIAL ISSUES OF PV DEVELOPMENT IN INDONESIA CASE STUDY: SHS AND HYBRID SYSTEM"</p>	<ul style="list-style-type: none"> • PV development is implemented under a concept of village/rural energy supply that accessible by the locals and designed to meet local energy demand, is directed to increase productive activities. Energy system is designed based on simplicity, and on individual basis, where local participation is included, while the financing mechanism is designed to maximize local ownership through schemes: <ul style="list-style-type: none"> - Low cost credit - Micro credit, and or - Lease • Financing strategy is performed through segmentation for consumers of SHS: <ul style="list-style-type: none"> - Segment 1, for under developed area. All the cost will be paid by GOI. The consumer begins to pay installment after 2 years. Cooperative Village Unit will do the technical and financial management. Down payment will be used for the first investment

	<p>of the management</p> <ul style="list-style-type: none"> - Segment 2, for the area where the consumers are able to buy SHS by installment for 10 years, GOI contributes for training, transportation fee, installation and interest rate. The consumers have to pay a down payment for balance of system. The SHS is provided by GOI - Segment 3, The SHS will be marketed by dealers (private companies). The down payment is between 20% - 30% of total cost. Use lease and purchase contract. Payment period is between 1 to 4 years. Marketing strategy depends on the dealer policy. The interest rate follows the local commercial rate. There is some contribution from GEF (US \$2/Wp) <ul style="list-style-type: none"> • It is concluded that PV is one of many solutions in order to provide electricity in remote areas that can improve economic activities • To overcome the high initial investment cost, an appropriate financial mechanism and institution has to be set-up for providing affordable financing. • Promoting institutional as well as technical capacity building is necessary to support proper program implementation and system sustainability • The role of the Government is to create proper supporting policies
<p>Presentation 6 Eva Wulandari Ekonid “POSSIBLE ROLE OF MICROFINANCE INSTITUTION FOR SOLAR HOME SYSTEMS MARKET DEVELOPMENT”</p>	<ul style="list-style-type: none"> • Indonesia is one of the countries that applied SHS in big scale, however so far, market is spoiled with free-given Solar Home Systems from government project. There is lack of proper training and technical assistance causing heavy broken systems in the field. • In Indonesia, PV company/firms face difficulties operating in rural areas, i.e. extremely high transportation cost, extra costs that arising from unanticipated maintenance, component replacement, outreach efforts and training. In fact, several companies are well developed but others are out of business. • Nevertheless, chances are high for SHS business and MFIs to start develop semi retail business • SHS company has limited source to run internal microcredit and cash sales is smaller than credit payment basis • While MFI do have the expertise to manage the risk and business in micro credit – whatever the product is • SHS company capacity need to be strengthen to attract MFIs set up the partnership • MFIs need to be flexible and sharpen the vision of low income as business opportunity for in energy sector i.e SHS • Pilot projects to be done to test the market and proof customer willingness to pay
<p>Discussion</p>	<ol style="list-style-type: none"> 1. Phillippe Gaeng, PF <ul style="list-style-type: none"> - Kholid and Eva presented there are 3 different scheme. How do you think it will be possible for company to make these 3 system works at the same time? <i>(Eva): these 3 different approaches are implemented by different actors; however the segmentation should be defined properly by the Government so that there would not be an overlapping between targeted areas of each system.</i> 2. Budi, PT Sharp <ul style="list-style-type: none"> - It is interesting that Eva mentioned that PV installation is not only for household activities but also for productive activities (small

	<p>medium enterprise), and therefore financing scheme to support it is a challenging opportunity for business.</p> <p><i>Yes it is interesting for financial institution to provide a PV credit scheme as long as it is feasible. For example Danamon, will acquiesce request for financing for at least 1500 unit of SHS (taking into account the price per unit is 5 million rupiah, the portfolio is then 7500 billion rupiah), on certain loan period. This chance is considerably negotiable as far as the project would be profitable.</i></p> <p>3. Tabita Malat, Total</p> <ul style="list-style-type: none"> - How do we define which area that will be covered by Government through social basis, and which area for commercial and semi-commercial approach? <p><i>From the Government, the mapping (data) would be available and accessible in DGEEU office, and also criteria of BRI, definition of the poorest of the poor are those who are not eligible to be awarded credit</i></p> <p>4. Binahar, Danamon Bank</p> <ul style="list-style-type: none"> - To update data on slide 13 of Eva, that up to date there are 800 units reaching more than 19.5 million SMEs - After following today's discussion, surely this field is actually not only limited to microfinance institution (MFI), because big finance institution will possibly take more role provided the system could be shown as economically feasible.
<p>Closing Lolo Panggabean "SUMMARY OF THE WORKSHOP"</p>	<ol style="list-style-type: none"> 1. The PV market in Indonesia is potentially high. 2. The government projects will cover the community in remote areas on a social basis, while under the Urban PV Program, encourages the utilization of PV on a (fully) commercial basis. 3. Other participants can enter and improphisize in the area between the urban and very remote areas. 4. Existing PV projects are implemented through various financing schemes; <ul style="list-style-type: none"> • BPPT project → 3 segments • Microfinance→ BRI Bank, Danamon Bank, if profitable <p>Option for Financing;</p> <ul style="list-style-type: none"> • The two hands model: may fit rather easily into the Indonesian situation. • The one hand model: will call for a large size company. This may be difficult to apply due to investment atmosphere nowadays. • The utility model: if this is to be incorporated with the utility, it will take a long procedure with PLN. <ol style="list-style-type: none"> 5. Micro financing implementation requires training 6. There is possibility of providing loan without collateral from bank (for example from Danamon; up to 10-15 million rupiah). 7. Poorest of the poor, may use criteria of BRI; those who are not eligible to be awarded credit 8. Role of BPPT: Standard of PV system such as SHS, Hybrid system, etc (SNI/Standar Nasional Indonesia). It is expected that there is clear regionalization of DGEEU (Government) target areas 9. Enhancement of Local Governments role in PV development, i.e. determining the location where the PV system will be installed, facilitating the community to form an institution to manage (operation and maintenance) the PV system, providing training to the community (if necessary with assistance from consultants), and by conducting regular monitoring of the PV system

Annex 1. Agenda

TIME	PROGRAM	SPEAKER/INSTITUTION
08.30-09.00	Registration	
09.00-09.15	Opening	1. Mr. Phillipe Gaeng – Planet Finance. 2. Mr. Agus Widiyanto - YBUL
09.15-09.45	“Expectations of Implementing of Solar PV Project in Rural Areas from a commercial approach”	Mrs. Ratna Ariati. Director of Renewable Energy and Conservation Energy of DGEEU
09.45-10.00	Discussion	
10.00-10.15	Coffee Break	
10.15-10.45	a) “Two hands Financial Model: Srilanka, Seed Bank”	a) Mrs.Yani Witjaksono Yayasan Bina Usaha Lingkungan
10.45-11.15	b) “One Hand Financial Model: Bangladesh”	b) Mr. Phillipe Gaeng Planet Finance
11.15-11.45	c) “Utility Model : Temasol, Marocco, or Senegal or other Similar Project”	c) Mr. Jean Christian Marcel Trans Energie
11.45-12.30	Discussion	
12.30-13.45	Lunch Break	
13.45-14.10	a) “Possible Role of Current Renewable Energy Player”	a) Dr. Kholid Akhmad BPPT
14.10-14.35	b) “Possible Role of Micro Finance Institution”	b) Ms. Eva Wulandari EKONID.
15.00-16.00	Discussion and Coffee Break	
16.00-end	Closing	YBUL

Annex 2. Attendance



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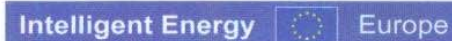
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Annex 3. Documentation



Documentation



Annex 4. Presentation Materials