



PP POWER End Evaluation Report

Sales Models, Payment Models and Micro Finance Findings

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1. Executive Summary

There is a significant demand for the PPP Solution and similar solutions in Tanzania. The way to succeed is to acknowledge that PP Power and its solution is an unknown brand, meaning that a regional / district-based market entry approach is the most optimal. On a regional / district level credibility should be built through a combination of working closely with Local Government Leaders and NGOs who already have established structures and credibility in the region / district. This to be followed by appointment of Local Sales Agents, that has to be carefully recruited to get the right profiles. It has to be acknowledged that investments in training and administrative support to the Local Sales Agents should not be underestimated. When the system on regional / district levels are stable and well-functioning and cost benefit analysis should be made if it makes sense to appoint a Super-Agent to handle the Local Sales Agents. On payment systems the market de-factor standard is loan financing. It's promoted as the main model of payment for these kinds of solutions and its recommended not to try to be "missioners" on other payment models as it will probably not be worth the efforts. It has to be acknowledged that providing loan financing to low-income communities where their re-payment capacity is far from being stable is a risky business that demands micro finance skills that PP Power do not possess and also shouldn't engage into. This means the loan financing should be outsourced to specialist companies based on a cooperation model to be entered between PP Power and the micro finance company in B2C segments or to an NGO in the B2G segment.

On **business models** the main lesson is to acknowledge that the PPP Solution and PP Power are unknown players in the market and the end-users are conservative in nature when it comes to engaging in new things. This combined with limited buying power means there is no short cut to sell the PPP Solution.

PP Power has to go through the theoretical way of first creating credibility and trust and thereafter gradually building up the sales. Evaluating the PP Powers go to market strategy, we have to acknowledge we didn't acknowledge this in the early stages of the project. PP Power pushed commercial sales from the very start which for the Tanzanian market was properly not the right strategy.

In terms of business models PP Power have managed to test most possible models, which by it-self is positive as it has generated initial experience with more or less all relevant models. Unfortunately, the conditions and timing of the testing of the different business models has not been perfect. Some business models have not been tested long enough, others have been tested too early and others has not been given the needed attention and time to mature. All of this have been valuable learning and PP Power are now, by combining and consolidating the experience, able to design an optimized go to market plan based on which business models to use at what time.

Rolling out the PPP Solution in a new market the conclusions are the following:

- a) Early engagement with local governments is crucial to get them to understand the solution and make them support the PP Power activities in the project area
- b) Early engagement with NGOs based on doing minor pilot programs to create credibility is important to remove or at least reduce skepticism about the PPP Solution and PP Power (B2G). Accepting that these minor pilot projects are to be financed by PP Power. The alternative is long discussions and waiting time for the NGOs to engage. NGOs doesn't have unrestricted funds and for them the convince their funding sources takes time and demands some level of experience and proven case with the PP Solution. PPP has done this in Kenya with the NGO KenyaHelp working at Lake Victoria and this could be a way to test in Tanzania as well

- c) In the earlier stages of the go to market plan engaging with Local Sales Agents in the project area is recommended. This is business model PP Power has been testing quite intensively. The Local Sales Agents are ideal in the early stages as they are close to the potential end-users and they can do live demonstrations which is needed to succeed in selling the PPP Solution. On top they have the advantage of being well-known in the communities. The leanings are the following: Recruiting the right Local Agent profiles are crucial, acknowledge that continuous training and follow ups are needed and that it takes a bit of time for them to start performing.
- d) Later on, when an area is well-covered, it can be an idea to appoint a Super-Agents, that on behalf of PP Power takes over some of the operational tasks supporting the Local Sales Agents and NGOs in the area to release resources for PP Power to develop new projects areas. Making the decision of using a Super-Agent or not the financial implication should be evaluated – the costs of performing the tasks PP Power outsource compared to the costs of including the Super-Agent in the equation. The skills and experience of a potential Super-Agent is of very high importance to be carefully evaluated.
- e) A model of dealing with a distributor (B2B), where more or less all operational tasks are outsourced has also been evaluated. This model is not viable in the earlier stages of go to market strategy as the PPP Solutions has to reach a certain volume in distribution and market awareness before PP Power has a good negotiation position discussing with potential distributors.

On **payment models** the absolute preferred payment model is loan financing, based on a model where the end-user pay a down payment amount when the contract is signed (typically 25-33% of the total value), the balance is there after paid in equal installments over a period of 12-24 months. The conclusion is, it's not possible to succeed in the market without providing this payment option to the end-users.

The main challenge here was that PPP were not able to engage technicality with local payment solutions like Airtel Money or M-pesa. This was done in Kenya but was very difficult in Tanzania.

Therefore, an alternative could be to engage directly with micro-finance institutes and use their payment systems.

PP Power has tested cash payment models based on different end-user prices, but even with campaign prices down to half of list prices the model has had very limited success. The main reasons are a combination of payment capacity that for sure only allow the few to make cash payments and the fact that all the major players in the market offers financing of these kind of solutions.

PP Power has also tested the leasing payment model, where the end-user pays a down payments to get access to the PPP solution and thereafter pay a monthly fee for using the solutions. In this model PP Power provides extended guarantees on the solution and the monthly fee to be paid is lower than on the loan financing payment model. The difference to the loan financing model is that the end-user will never get ownership of the solution. This part has shown to be very difficult to make the end-users understand and accept and due to this specific factor, the leasing payment model has not been popular among the end-users.

In general loan financing is a requirement to succeed in this market. Handling credit sales to low-income communities is challenging and demands micro finance skills in terms of loan appraisal procedures and debt collection handling. Challenging disciplines for a start-up company, but a mandatory requirement to succeed.

The question arising from this conclusion is how best loan financing can be handled by PP Power. There is no doubt this is a complicated task, that falls out the competences and experience of PP Power. As part of the project a micro finance framework has been developed. The framework has been discussed and adjusted in corporations with professionals in the micro finance sector to secure that its acceptable for the Micro Finance Institutes and also attractive for the end-users. The framework is completed and

a few tests has been conducted. The recommendation is to test the model with more end-users. Make needed adjustments in the framework based on these tests and make cooperation with local MFI's an integrated part of the PP Powers go to market strategy. This area is for sure object for outsourcing.

Sales Models

The recommended sales model in the initial stages of market entry is a combination of NGO partnerships and Local Sales Agents. The rationale behind is the need for boosting credibility towards the PPP Solution and PP Power on the target group, which is secured through NGO partnerships and lobbying with the local governments. The Local Sales Agents also create credibility as they are represented in the areas where the end-users live, which is needed to secure availability for product demonstrations and after sales support.

When a region / district is performing based on this model a cost benefit analysis has to be made if it makes sense to appoint a Super-Agent that takes over some of the supporting tasks related to maintaining the Local Sales Agents. The costs will be payments to the Super-Agents and the benefits will be PP Power offload tasks and responsibilities to the Super-Agent enabling a build-up of sales systems in other regions / districts.

2.1. Sales Model Definitions and Sales Models tested

PPP has been testing a number of Sales Models with the purpose to getting feedback from the users and the participants in the sales models.

The participants are defined as the following:

Table 1: End users and participants - definitions

End user or Participants	Definition
End users	The user of the PPP Solution
Sales agent	A participant that sells the PPP solution in the name of PPP Solution and receives a commission for the sales completed (remember the min grids)
Distributors	A Participant that sells the PPP solution in its own name and buys PPP solutions at a wholesale price
Friends to friends	A participant (PPP solution end user) that sells PPP solutions to friends, neighbours and family in the name of PPP solution and receives a commission for sales completed
NGO's	A participant (NGO ort Government entity) that sells the PP solution to its program participants either in its own name or in the name of PPP solutions and at receives a commission for sales completed
Online partner	A participant that sells the PPP solution through online media
Retail partner	A participant that sells the PPP solution through retail channels

PP Power has tested sales models related to the following groupings:

Table 3: Grouping of Sales Models

Grouping of sales models	Description

Business to Consumers Models (B2C)	Models where PPP interact directly with the end users in terms of sales
Business to Business Models (B2B)	Models where PPP Solutions interact with participant that do the sales on behalf of PPP solutions
Business to Government / NGO Models (B2G)	Models where PPP Solutions interact with Government Structures or NGO Structures that do the sale on behalf of PPP Solutions

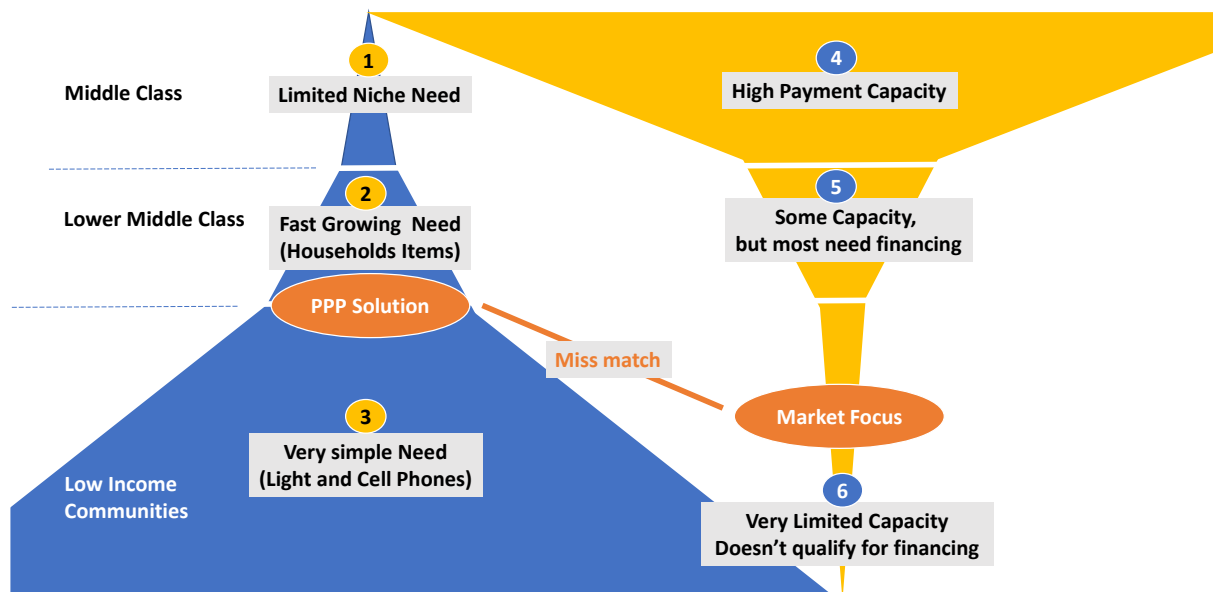
2.2. Conclusions and Recommendations

The challenging part of the market entry is how to deal with the situation where the households with the highest need and demand for the PPP Solution is the ones that basically can't afford to buy the PPP Solution and also in most instances doesn't qualify for financing.

And the other side the households that can afford to buy the PPP Solution basically doesn't need it – either because they already have access to electricity or demands a solution with larger capacity and functionality than what is provided by the PPP Solution.

This challenge is illustrated in figure 1.

Figure 1: Market Entry Challenge



Initially PP Power focused on low-income communities based on the fact that the need among those was the largest and the impact the largest too. *Theoretically this was a correct decision, but practically it created a miss match between the pricing of the PPP Solution and its functionality and the need and the payment capacity of the end-users.*

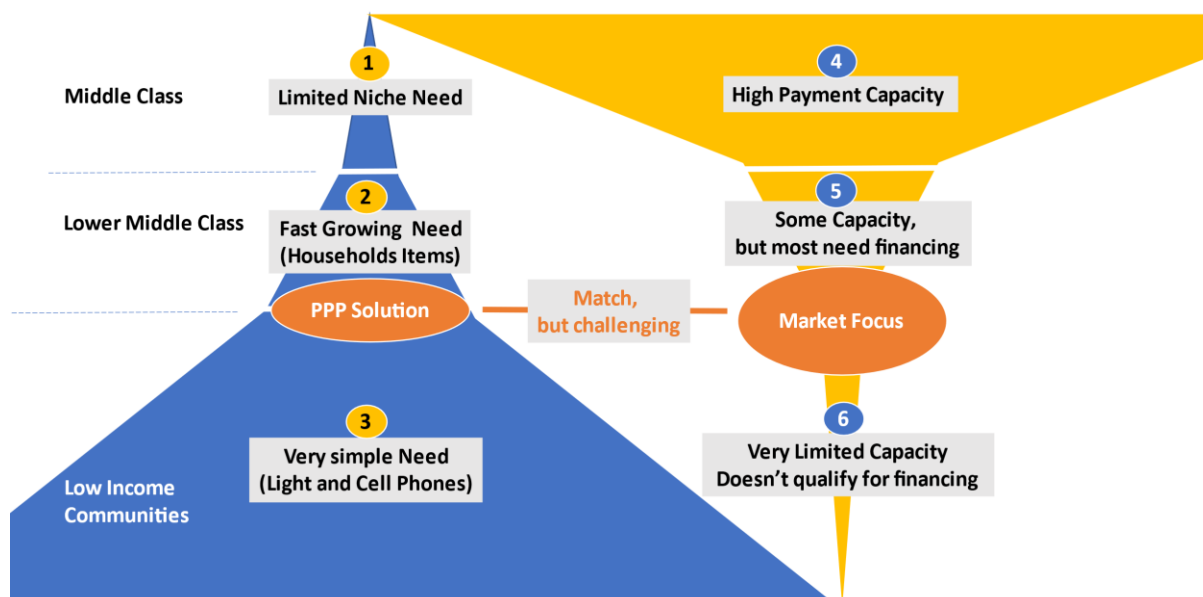
To reach this conclusion took a bit of time for PPP Solution and partners. The PPP Solution is designed to be a low-end segment 2 solution, but PPP Solutions initial market entry strategy was very much targeting segment 6. This resulted in a situation where PPP Solution provided a solution with more functionality than needed to a market segment that for the absolute majority didn't have payment capacity and for the majority didn't qualify for financing either.

Acknowledging this fact got very clear when doing the marketing campaign where data was collected from more than 2,000 potential clients that had shown interest in the PPP solution and an analysis of the demographics of the clients that already had invested in the PPP Solution.

Adjusting the Market Entry Strategy

This resulted in a change in the market entry strategy moving away from focusing purely on low income communities and readjusting towards a more challenging discipline to spot clients in segment 5.

Figure 1: Market Entry Challenge 2



Segment 5 is challenging to identify as there is very limited available of data on demographics. But it typically the lower middle class living in areas where access to electricity is challenging. It can be e.g. small business owners and civil servants.

PPP Solutions started collecting demographic data on the potential clients in order to identify the most potential PPP Solution clients. Data was collected on the following:

- Type of housing used (own or rented and type of housing etc.)
- Type of transport used (vehicle, motor bike etc.)
- Type of financial services used (bank account, saving group etc.)
- Household items (TV, Fridge, cell phone etc.)

Based on these mini questioners it was possible to segment the market and target the sales efforts.

Identifying the optimal sales model

Introducing a new solution with new features by an international start-up company focusing on lower middle-class clients in developing countries are per definition a very complicated task that demand a high level of knowledge and experience.

As a start-up company with limited capital resources the challenge is even larger. PPP Solution aligned with Kakute Projects and PG Consulting that both have significant local experience. The partners decided on a strategy to test out a number of sales models.

Some overall conclusions, before going into each of the tested sales models, are the following:

- There is a significant need for providing improved access to electricity in Tanzania as more than 50% of the population are living in areas with no access to the public grid
- Many areas of Tanzania, especially rural areas, will not have access to the public grid in a foreseen future. Tanzania is a developing country with limited electrical infrastructure and geographically 21 times the size of Denmark, so the need for solutions like the PPP Solutions will be there for a long period into the future
- There is a documented high interest in the PPP Solution, this is documented based on the marketing campaign, that over 7 days managed to mobilize more than 2,000 interested households
- Providing access to electricity through solar solutions in Tanzania is a highly competitive business with a number of larger well-capitalized providers in the market
- Going through a process of creating awareness, followed by building community trust can't be short cut when dealing with low-income and lower middle-income communities in Tanzania. These people are per definition conservative when it comes to investments mainly because the investment size even for a small system like the PPP solution for them is a major investment (for many 6-12 month's income). Creating the credibility and trust among the end-users is a demanding process that takes time.
- Building local trust is best done through working with local government structures and or NGO structures combined with awareness creating activities and very close sales follow-ups
- Local Sales Agents combined with Local Government / NGO lobby activities seems to be an efficient way to create convert buying interest to buying intention
- Financing models seems to be needed to convert buying intentions as payment capacity is a major challenge. More about this item in the section regarding payment models
- Succeeding with any sales model demand consistency and time. PP Power has been time limited and has not been giving each sales model the required time to mature before moving to other sales models. This has resulted in low sales results, but PP Power has gained significant knowledge about different sales models in terms of functionality and timing.
- There seems to be an urban market for the PPP Solution as a back up power supply for specific emergency electricity demands, like light, TV, phones and laptops. This is a super niche segment and it will not be commented on further in this report.

2.3. Business-to-Consumer (B2C)

PPP Solution has tested a number of business-to-consumer sales models:

Selling through PPP sales representatives

PPP Solution started using own sales force and was selling through PPP employees. The advantage was that the sales people was under the full control of PPP Solutions. The sales efforts were targeting rural areas and semi urban areas in Arusha and neighboring regions.

The main conclusion related to this model is with the right sales representatives and the right incentive system the model is generating sale, but it's not scalable and it's too costly.

The clients are challenging to identify and the distance between each client are often large meaning that the cost of acquiring clients exceeds the value of the clients. The model was very beneficiary for PPP Solution in the initial stages of the project due to its high level of control and ability to collect learnings.

Tabel 4: Advantages and disadvantages – Selling through PPP Sales Representatives

Advantage	Disadvantage
High level of control	Expensive
Good learning model	Not scalable

Selling through existing clients

Another model that was tested was to sell through existing clients. Most of the time people living in the community are more trusted than sales people coming and try to sell. PPP developed a sales model for friend selling to friends that basically rewarded the person selling with the value of 1 PPP solution for each 10 PPP Solutions sold. The sales model was tested both by appointing “normal” end users and also by appointing more influential end-users. The last in the belief that a strong voice in the local community might be more effective selling than a “normal end-user” voice.

The challenge with the model is that it demands a certain level of technical understanding and knowledge by the person trying to sell the solution to be successful. Other challenges beyond the knowledge part were the need for demonstration systems and other supporting activities like sales support and installation services to keep the momentum and interest among the appointed existing clients high enough to engage in active sales. The last challenge observed was this sales model demand a minimum level of awareness activities in terms of promotion in the area to be successful.

The main conclusion is selling through existing clients is interesting as it has potential, but it’s not a suitable sales model in the initial stages of the market entry as it demands a certain level of awareness and trust about the PPP Solution and PP Power company.

Tabel 5: Advantages and disadvantages – Selling through existing clients

Advantage	Disadvantage
Variable costs, meaning commission is only paid out when systems are sold	Low level of control
Its highly Scalable	Demands a minimum level of awareness and trust to be established
	Demands continuous support and training

2.4. Business to Business (B2B)

Sales through Local Sales Agents

Following the initial market entry strategy of selling through PPP sales representatives the next model to be tested was selling through PPP appointed Local Sales Agents. A total of 15 was appointed in the Arusha region. The local sales agents were trained and all was equipped with 2-3 PPP Solutions. The provided PPP Solutions was serving as demonstration systems and a mini stock to be used for fulfillment of local sales. The local sales agents appointed was mainly small existing shop owners, that had shown interest in the PPP Solution and was evaluated having the capacity to be trained in how to sell the PPP Solutions.

The results from the Local Sales Agents were initially positive. Most of them manage to make the first sales in relatively short time. But it was like the energy went out of them shortly after PPP Power has invested in them. The feedback received was mainly that the finding clients that could pay for the solution in cash (which was the payment model for the Local Sales Agents) seemed to be a large challenge. Over 1-2 months with limited and for many no sales the established competences and knowledge about the PPP Solutions somehow vanished and the Local Sales Agents went into sleeping mode.

PP Power evaluated that what was needed was a boost in qualified leads to make the Local Sales Agents perform. Based on this PP Solution invested in a large mobilization campaign that in total created more than 2,000 leads. PP Power collected demographic data on all 2,000 leads and did segmentation on the leads leading to 5 different segments based on attractiveness. In total PP Power ended up with +400 leads in the top 2 categories which both fell in the category of having need and payment capacity. PP Power invested in tele marketing, where all 400 qualified leads were contact by phone and further qualified in terms of buying intention. More than 30% expressed intention to buy either now or with in the coming 1-2 months. These leads were to be followed up by the Local Sales Agents supported by PP Power’s local sales and support team. Despite these efforts this sales model didn’t perform.

The reasons for non-performance are evaluated to be a mix of the following:

- Wrong profile of Local Sales Agents
- PP Power’s local sales team underestimated and probably didn’t have sufficient capacity to providing the needed support to the Local Sales Agents

The main conclusion is that the Local Sales Agent sales model probably is the most ideal sales model for initial market penetration in new geographic areas. The reasons are local presence is important. The reason for the observed non-performance of the Local Sales Agent is a combination of poor recruitment of the Local Sales Agents and a too weak support system to the Local Sales Agents.

Tabel 6: Advantages and disadvantages – Selling through Local Sales Agents

Advantage	Disadvantage
Local well-known resellers that provide local credibility	Medium level of control on how the Local Sales Agents perform, the local stock and administration tasks
Close to the market and the potential clients	Demands significant training as most Local Agents doesn’t have a technical background
Partly scalable model with limited costs adding Local Agents	Demands continuous support and training

Sales through Super-Agents

After the experiences with the Local Sales Agents, it was recognized by PP Power that this sales model demands more support than what was in PP Powers capacity. This resulted in appointment of a Super-Agent in Arusha which responsibility was to support the Local Sales Agents and at the same time by themselves develop sales. The Super-Agent appointed was part-financed by PP Power.

The Super-Agent was initially active and managed to do some sale, but it the Super-Agent were not serious regarding the intended support they were supposed to provide to the Local Sales Agents. This was the main reason for losing the Local Sales Agents. The performance of the Super-Agent was

reducing after the initial 2-3 months and as results of the efforts didn't show up the financial attractiveness for the Super-Agent diminished and the active cooperation stopped after 6-7 months. The Super-Agent was a major player in the handling of the +400 qualified leads that was generated from the marketing campaign, but failed in the campaign management.

The rationale behind appointing a Super-Agent was to release the PP Power sales - and support organization for operational tasks to make it possible for them to expand and build sales systems in other geographical areas, but it showed up not to work due to a mix of the following reasons:

- Appointment of the wrong Super-Agent profile
- PP-Power to appoint the Super-Agent too early before proper supporting systems was established

The main conclusion is that appointment of Super-Agents should be an element in the market entry strategy, but recruitment of Super-Agents should be based on documented experience and knowledge how to build businesses and that the needed supporting systems and control mechanisms should be in place before Super-Agents are appointed.

Tabel 7: Advantages and disadvantages – Selling through Super-Agents

Advantage	Disadvantage
Makes it possible to scale up faster, as PP Power will have less partners to support	Success is to a large extent outsourced to the Super-Agents, meaning recruitment and training are crucial
	Demands payments of both Local Sales Agents and Super Agents making the solution less price competitive
	Demands continuous support and training

Sales through distributors

After the experience with the Super-Agent model, PP Power and partners acknowledge that a sales model that outsourced the majority of sales related tasks to a strong partner should be the last model to be evaluated and tested.

PP Power appointed a potential distribution partner in Dar es Salaam with significant expertise and experience in marketing, sales and distribution of technical solutions. A cooperation agreement was entered, where the intention was to start up with a stock of 50 PPP solutions. Training was conducted and the Distributor was testing the interest in its existing sales system. The feedback from the Distributor was mixed:

- There was not a perfect mix between the Distributors existing distribution network (high end solution to professionals) and the needed network for distribution of the PPP solution (low end solutions to local many local distributors). This was clear from the beginning, but the distributor saw a strategic need for them to start build up a fine masked distribution system and at the same time they intended to move into distribution of solar based solutions.
- The PP Solution was difficult to position in the market. It has too many features to be a low-end solution for the rural area population and was too expensive for this market. It has too few features to be attractive for the more professional segment (which was the main target group for the distributor).

The feedback from the Distributor was the PP Solution was the right solution for them and the partnership was decided to be terminated.

The main conclusion is a model where all marketing and sales activities are outsourced to Distributor can potentially be strategy to pursue, but the challenge is most such distributors will like to see a certain level of proof of concept (market demand and technical functionality) before engaging. On top of this to identifying the perfect match partner is challenging. PP Power was out too early (not proven concept) and the distribution network of the appointed distributor was not well-aligned with the need of PP Power.

Tabel 8: Advantages and disadvantages – Selling through existing clients

Advantage	Disadvantage
Demands limited market knowledge	Very limited control of market development
Faster access to market due to Distributors existing knowledge, experience and network	Demands a proven concept before possible or significant of investments in the partnership if started up before proven concept

2.5. Business to Government (B2G)

Early in the process PP Power decided to include working with NGOs as a part of the go to market strategy. The rationale is time to market for a new solution from an unknown supplier in a market with limited buying power and conservative in decision making process establishing credibility is a major key to success. Cooperating with NGO's, who often have been building credibility in their project areas for years will shorten access to market for PP Power.

PP Power has been in contacts with +15 NGO's presenting them for the PPP Solution getting their feedback on the solution including the impact it provides for the end-users and the motivation for the NGOs to engage in a cooperation with PP Power. The proposal to the NGOs was a discounted price of the PPP Solution. The contacted NGOs are working with different program areas ranging from community development, women and youth employments, health and education.

The feedback from the NGOs has in general been positive. There is a clear understanding of the solution among the contacted NGO's and an acknowledgement of the impact it can provide for the households in their project areas. An important finding is that working with NGO's, who for most instances get their funding from donors, either through developing projects and present them for donors or make proposals to projects developed by donors. This means the absolute majority of their funding is earmarked to specific purposes and can't be used for other purposes.

Based on the above it has not been possible to start up larger programs with the NGOs, but the foundation has been established.

This model has also with some success been tested in Kenya through a local NGO called KenyaHelp operating at the Victoria Lake near the Tanzanian border. Experience from this NGO have been used to try and setup a trial on the Tanzanian side of the border. A minor program is under implementation where the NGO is working in the border areas between Kenya and Tanzania.

The issue related to requesting NGOs to pay for the PP Solution, which has been the proposal offered from PP Solution, result in a long processing time often with an unpredictable outcome. PP Power took this road and are now in waiting position for the outcomes of the discussions.

The main conclusion related to including NGOs in the market entry strategy is it makes a lot of sense. What's important is to be very clear about the purpose of doing so. The purpose should purely be to create awareness and credibility in the project area about the PPP Solution and PP

Power as the supplier and not initially to sell PPP Solutions. Selling will automatically come later when proof of impact has been generated.

PP Power unfortunately mixed up the purpose of cooperating with the NGOs in the initial phases, which create long negotiations with limited results. *The right way would have been for PP Power to donate an amount of PP Solutions to the NGO's, getting the PPP Solution introduced in the NGOs and giving the NGOs the needed time to mobilize funding for payment of the PP Solution through their donor networks.*

Tabel 9: Advantages and disadvantages – Selling through NGOs

Advantage	Disadvantage
NGOs will bring credibility to the PP Solution and PP Power as they typically have been operating in the project areas for years and the population trust them	Getting projects financed through the NGO's is a time-consuming process that easily can take 1-2 years.
NGOs has distribution structures including staff in the project areas, meaning local tasks can be handled by the NGOs	Demands a proven concept before possible or significant of investments in the partnership if started up before proven concept

3. Payment Models

PP Power has tested a range of payment models. This has from the beginning been an important exercise due to the fact that the PPP Solution is a major investment for the targeted households and most of them will not be in a position to pay in cash and will need some kind of financing.

3.1. Payment Models tested

PP Power has tested the following payment models:

- a) A cash payment model, where the household pay the full price for the solution in cash. In regards of this model PP Power has tested different prices to get learnings about cash payment willingness.
- b) A leasing model, where the household pay an initial fee and there after a monthly leasing fee. In the leasing model the ownership of the PPP Solution is PP Power. The household basically pay for having access to the solution. All kind of repairs and maintenance will be covered by PP Power in a 3- or 5-year period depending on the duration of the contract.
- c) A down payment model, where the household pay the PPP Solution in installments. The ownership of the PPP Solution will be handed over to the household when the last installment has been paid. In regards of this model PP Power has tested different repayment models in terms of the size of the down payment and the duration of the repayment period.

3.2. Conclusions and Recommendations

The experience on payment models is very clear, the absolute majority of clients doesn't have the capacity to pay the PPP Solution in cash. Less than 5% of the households has chosen this model. The reason is availability of the cash, where the absolute minority doesn't have access to the cash needed to buy as a cash transaction.

Adding the financing to the PPP Solution off course add complexity in administration and handling for PP Solution as credit agreements has to be entered and repayments has to be administered in terms of follow-ups and registrations. As PP Power is a startup company with limited resources handling these disciplines has been challenging.

Another important observation is, that the leasing model is not seen as attractive for the households. The households do not understand the model of paying for having access to the solution, but never end up owning the solution. Despite this model has a lower monthly payment and guarantee maintenance and repairs in the duration of the contract no households have chosen this model. The reason is perception – when your pay monthly at the end of the day you should end up with the ownership.

The absolute preferred option is the down payment option, which basically is selling the solution on credit, where the client pays back the solution in 1-2 years based on a credit agreement. A contributing factor to the preference for this model is that most of the larger actors in the market are using this model, so many households have the belief that this is the only way to do it.

3.3. Cash Payment Model

The Cash Payment Model is from a cash management point of view the most attractive model for PP Power. Initially the cash price for the full PPP Solution Package was TSH 700,000 (USD 300). During the project period the price has been lowered all the way down to TSH 350,000 (USD 150). This to test the cash payment price elasticity. The last price is very competitive compared to cash prices for competitive solutions. The conclusion is that even with reduced cash prices the households are very reluctant to pay cash for these kinds of solutions. The cash payment price elasticity is very limited.

The reason behind the reluctance to pay in cash is a combination of available payment capacity witch for many households are low, but just as important all major competitors are selling solutions based on financing, meaning that the most common payment model is to pay based on a financing solution.

The main conclusion is that even with campaign pricing cash sales to the target group are very challenging due to a combination of payment capacity and de-facto market standards set by the major players in the market that all operates based on financing models.

Tabel 10: Advantages and disadvantages – Cash Payment Model

Advantage	Disadvantage
Its good for the PP Power’s cash management situation	The households (clients) don’t have the payment capacity to make cash payments (even with reduced cash prices)
It reduces risks and administration related to engaging in credit arrangements	The market has been introduced to financing models by the major players in the market, so it’s challenging successfully to promote cash payments

3.4. Leasing Payment Model

A bit surprising the households has been showing very limited interest in the leasing model. In many ways it’s an attractive model as the monthly payments are lower that the loan financing model and it provides a lifelong guarantee on maintenance and repairs. Despite these advantages households has shown very limited interest in this model. It has to be kept in mind that most of the households are not familiar with leasing models, which for sure is a part of the explanation for reluctance to engage. The main feedback received is the fact that the household will pay for having access to the solution every month, but never will get to owe the solution. This last part is the main reason of rejection.

The main conclusion is the end-users do not understand and accept a model where they pay a monthly leasing fee and never get the ownership of the solution. This even when the monthly fee is lower than in the loan financing model and where maintenance are guaranteed for the whole duration of the leasing agreement.

Tabel 11: Advantages and disadvantages – Leasing Payment Model

Advantage	Disadvantage
The monthly costs for the end-user are lower than for the loan financed model	The households do not accept they pay monthly, but will never end up owing the solution
The end-user can get the solution and its benefits before having saved the whole amount for paying it in cash	Efforts has to be invested in making the households fully understand the model and its benefits.
	PP Power have extended guarantee obligations related to this model and
	PP Power have extended credit management tasks including has to establish access to capital to provide loan financing

3.5. Loan Payment Model

This model is the preferred model in the market and it's promoted by most of the larger players. The experience of PP Power based on the feedback from the households confirms this model is more or less a de-facto standard for payment of these type of solutions.

PP Power have set its loan terms and loan conditions comparable to market standards. The absolute majority of the PP Power households have bought the PPP Solution based on the Loan Payment Model.

The main conclusion is loan financing is a must have to be successful in the market. It's a model that has been promoted heavily with most of the larger players in the market and it has become close to a de-facto standard for how to pay for solar systems.

Tabel 12: Advantages and disadvantages – Loan Payment Model

Advantage	Disadvantage
PP Power will join the rest of the market on payment models, meaning this part will be familiar to the end-users	PP Power have extended credit management tasks, which is a resource demanding discipline that demand micro finance skills in loan appraisals and debt collection
The end-user can get the solution and its benefits before having saved the whole amount for paying it in cash	PP Power have to establish access to capital needed to provide loan financing

4. Micro Finance Findings

The following model has been developed by PP Power and tested with a selected Micro Finance provider. The model has shown to be acceptable for the Micro Finance company, that based on the knowledge about end-user perceptions on loan facilities are evaluated as viable for the end-users. Unfortunately, and due to time limitations, the described model has only been tested with few end-users and will need more testing before final conclusions can be made.

4.1. Development of Micro Financed Model

The following model has been developed in close cooperation with professionals from the Micro finance Sector and as it's based on value loss financing with a PP Power repayment model in build, the financing is quite competitive compared to other financing models in the market. The model is described in the following:

4.2. Loan Disbursement

- a) Approved Local Sales Agents appointed and certified by PP Power will identify clients for the PPP solution.
- b) The PPP reseller will do an initial credit suitability assessment based on a few criteria agreed on between PPP and the Microfinance Institution.
- c) If the initial credit suitability assessment turns out positively the client is referred to the micro finance institution for a complete credit suitability evaluation.
- d) If the complete credit suitability evaluation turns out positively the Micro Finance company will enter into loan contract with the client for financing the PPP solution
- e) When all loan documents are completed and signed between the Micro Finance Company and the client PPP is informed that the PPP solution will be financed through a loan agreement between the client and the Micro Finance institution.
- f) PPP will inform the Local Sales Agent to release a PPP solution to the client based on a copy of the loan agreement
- g) When the client receives the PPP solution, he will sign a delivery confirmation note, that will be send back to PP Power
- h) PP Power will send a copy of the signed delivery confirmation note to the Micro Finance Company that will transfer the loan amount to PPP.

4.3. Loan Repayment

- a) The client will pay back the loan to the Micro Finance Institution based on the signed loan agreement
- b) When the loan is fully repaid the Micro Finance Institution issue a loan agreement completion document confirming the loan is fully repaid. The loan agreement completion document will be sent to PPP

- c) In case the client default on the repayment the Micro Finance Institution initiates its normal debt collection procedures in order to collect the debt. This includes instruction to PPP to close the battery, so its non-functional.
- d) In the case the client after completion of the Micro Finance Institutions debt collection procedures doesn't pay back the loan the following procedures to recollect the PPP solution will be started:
- The Micro Finance Institution will secure that all formalities in regards of re-collecting the PPP solution is fulfilled
 - The Micro Finance Institution will send a re-collection order to PP Power including a copy of the signed loan agreement
 - PP Power will send the re-collection order to the Local Sales Agent instructing them to re-collect the PPP solution at the client site
 - After re-collection of the PPP solution the client and the Local Sales Agent will sign a document listing the items that has been re-collected
 - The list of re-collected items will be sent to PP Power who will share the document with the Micro Finance Company based on the following re-funding scheme:

Recollection time from time of loan agreement signatures:	0-3 months	4-6 months	7-12 months	13-18 months	19-24 months	25-36 months
Percentage of the loan amount to be paid back to MFI *)	90%	60%	40%	30%	20%	10%
Percentage of the loan amount to be paid back to the MFI **)	80%	50%	30%	20%	10%	0%
Percentage of the loan amount to be paid back to the MFI ***)	10%	10%	10%	0%	0%	0%

*) For complete solutions where the battery and the panel are un-damaged

**) For solutions where the battery is un-damaged and delivered back, but the panel is damaged or not delivered back

***) For solutions where the panel is delivered back and un-damaged, but the battery is damaged or not delivered back

4.4. Testing of the Micro Financed Model

The model has been tested on a few end-users and need more testing before final conclusions can be made, but the first indications are positive.

4.5. Conclusions and Recommendations

Successful handling of credit arrangements in low-income communities has shown to be a very challenging discipline. PP Power is still struggling with tasks related to the credit sales made based on PP Power handling these processes. This is for sure an area that has to be outsourced. Therefore it's recommended for PP Power to outsource the financing of the PP Solutions and establish cooperation with local MFI's in the regions / districts of operations based on the described model.