

Distributed Solar Survey: Key Findings

The Response of Rooftop Solar Developers to COVID-19

Updated: June 2020

Executive Summary

The survey was sent to 40 distributed solar rooftop companies. Of these, approximately 70% were existing US-India Clean Energy Finance (USICEF) beneficiaries, while the other 30% were potential applicants.

The COVID-19 outbreak had a negative impact on the balance sheets and liquidity status of respondents with the majority reporting an increase in receivables amounting to 20% and above. A considerable number even reported payment defaults from almost 20% of customers. Defaulting customers primarily required a moratorium during the lockdown period citing the loss of their own revenues due to their operational shutdowns.

The lack of availability of working capital has proved challenging for those respondents that required capital. While banks have been largely agreeable to project term loan restructuring and moratoriums during the lockdown, they have been reluctant to increase sanction limits on working capital loans.

Respondents are concerned that an increase in due diligence timelines of lenders due to further lockdowns over the next year could become a significant bottleneck to access loans. Faster due diligence processes as well as reduced interest rates from lenders would provide the most benefit.

During the lockdown, delays in government approvals, such as net metering, have created the biggest execution bottleneck followed by labor shortages for engineering, procurement, and construction (EPC). Over the next one year, these factors could have a significant impact on order books as well as the sales pipeline, and result in business losses of 30% or more if the current situation of partial lockdowns and reduced economic activity continues. The respondents would benefit the most from positive government actions such as improved credit availability through credit guarantee schemes as well as reduced regulatory and compliance roadblocks like import duties and net metering approvals.

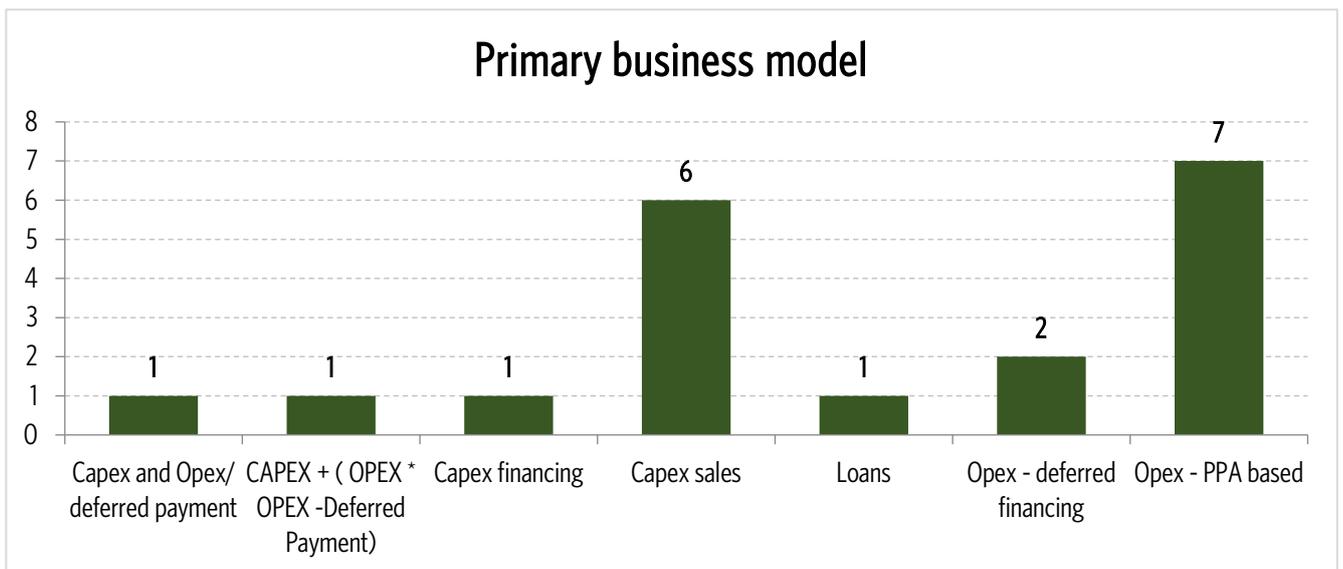
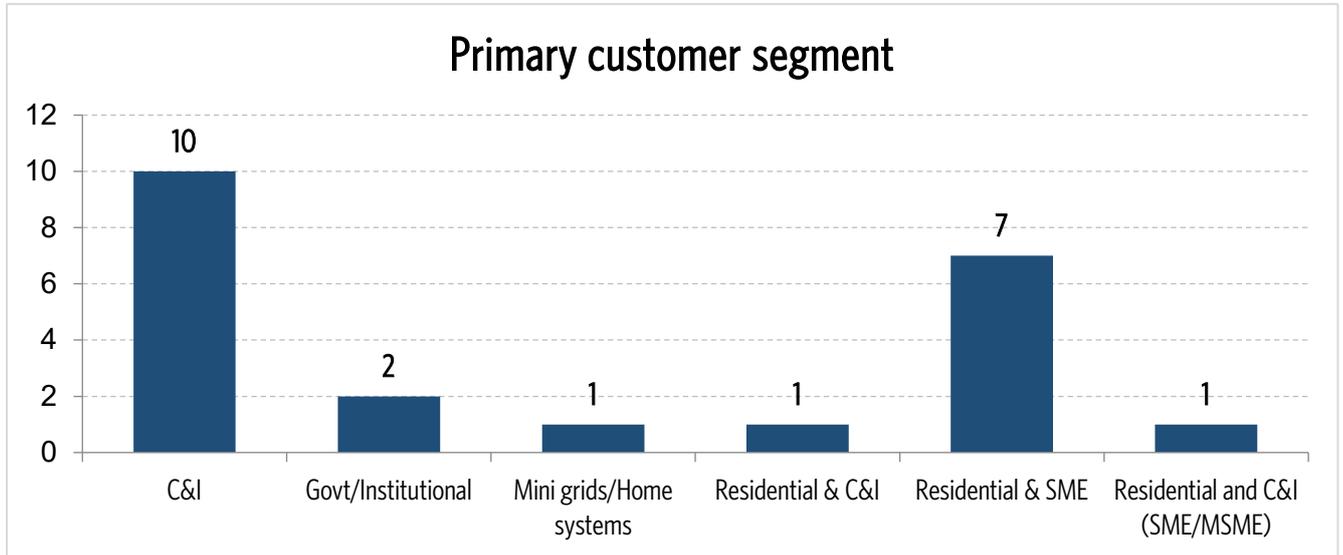
The majority of respondents assess the solar rooftop and energy storage market to be significantly attractive, and expect the viable cost of a typical distributed system (1MW solar + 250 kw/4hr storage) to reach INR 6-9/unit within the next few years.

An overwhelming number of respondents have found the USICEF program to be instrumental in their project development activities. They would benefit immensely from additional USICEF grants, especially in the area of transaction services such as market assessment or commercial feasibility studies and financial advisory support.

1. Context and Methodology

In the month of May, the USICEF team conducted a survey of solar rooftop developers in India to assess the fallout from the COVID-19 lockdown and its possible repercussions over the coming year. The survey contained 20 questions, of which 18 were objective or multiple choice and two were subjective questions. The objective questions were designed to encourage participants to report their qualitative opinions in a quantitative manner. The subjective questions were designed to allow

participants to report their outlook on the market and provide feedback on the USICEF program. The list of questions is included in Annexure-III of this report. The survey was conducted through Google Forms and allowed respondents the freedom to express their opinions anonymously with one response per participant.

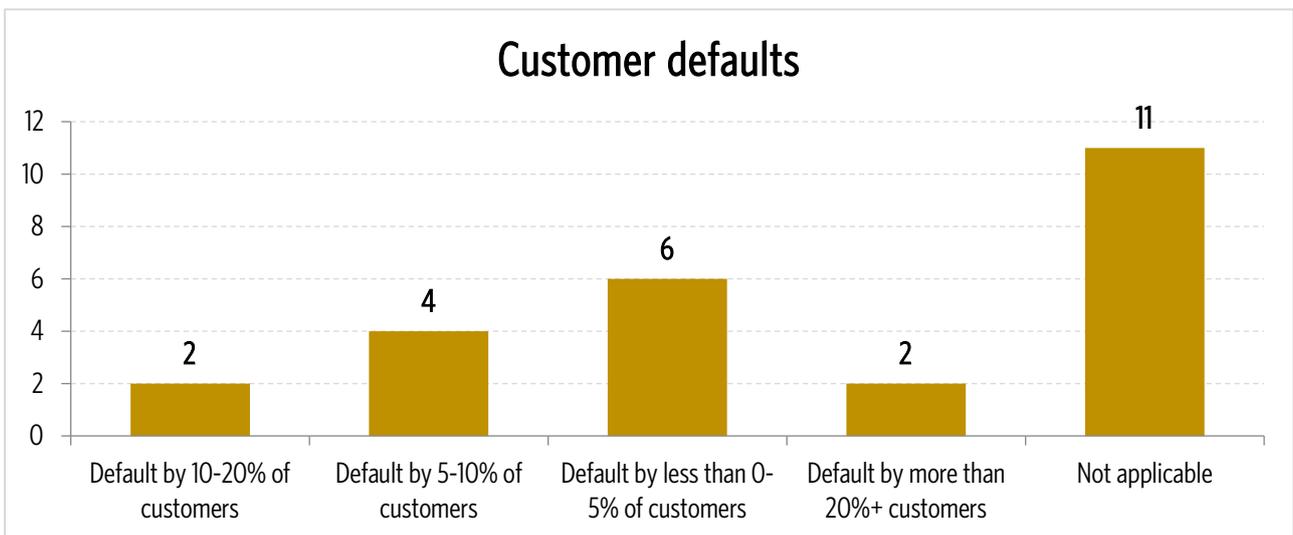
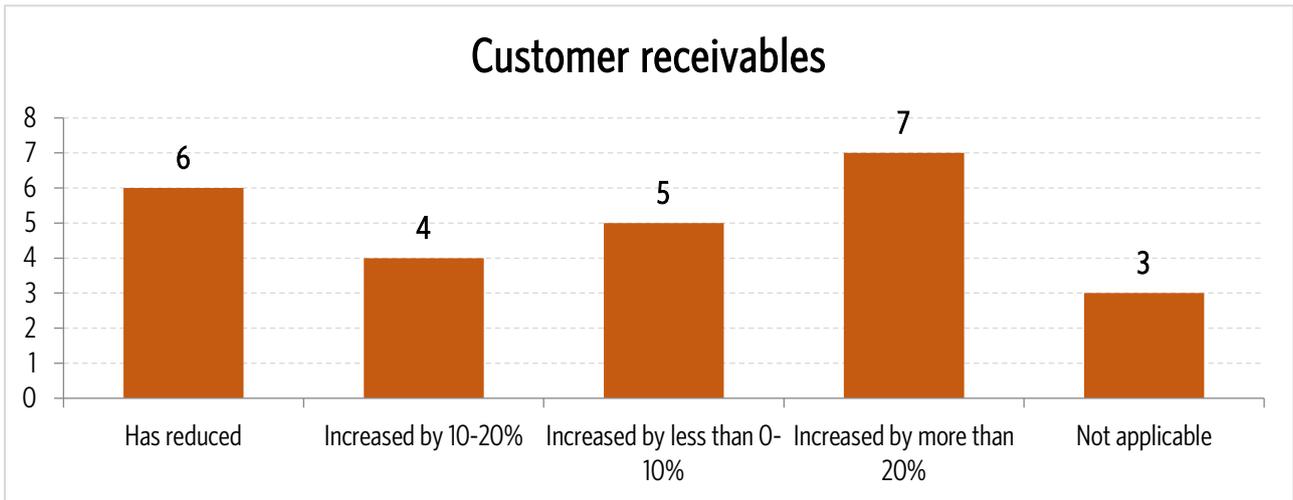


The majority of respondents catered to the commercial and industrial (C&I) segment (53%), followed by the residential segment (21%). The primary business models of the respondents were OpEx/PPA (35%) and CapEx sales (35%).

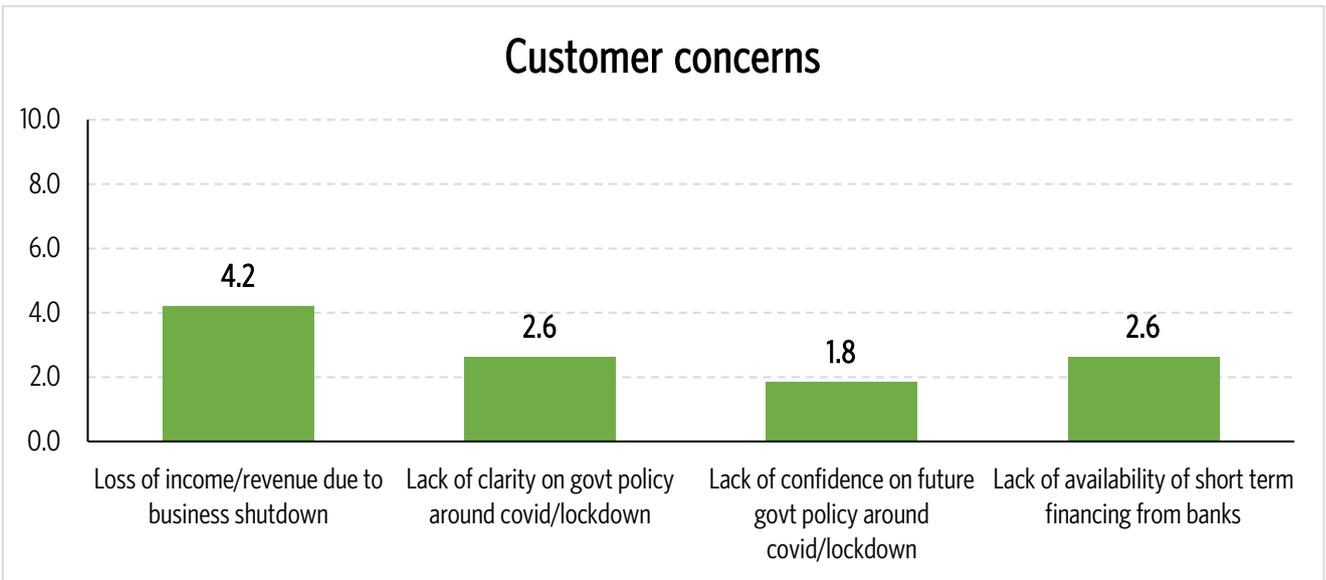
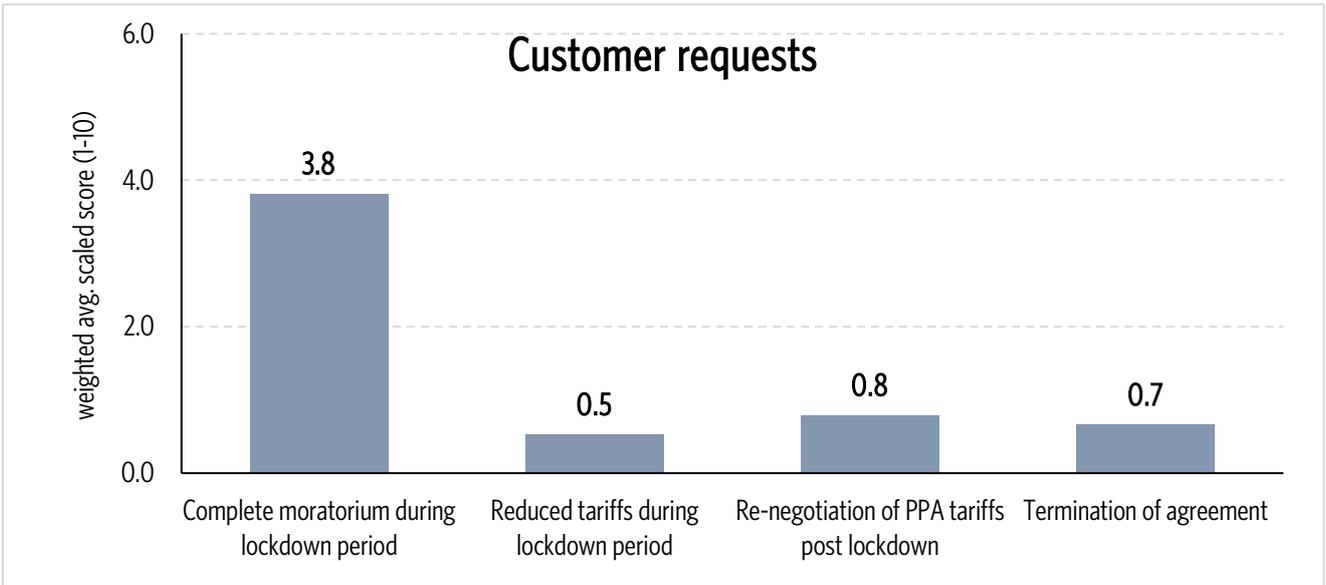
2. Key Findings

2.1 Business Impact

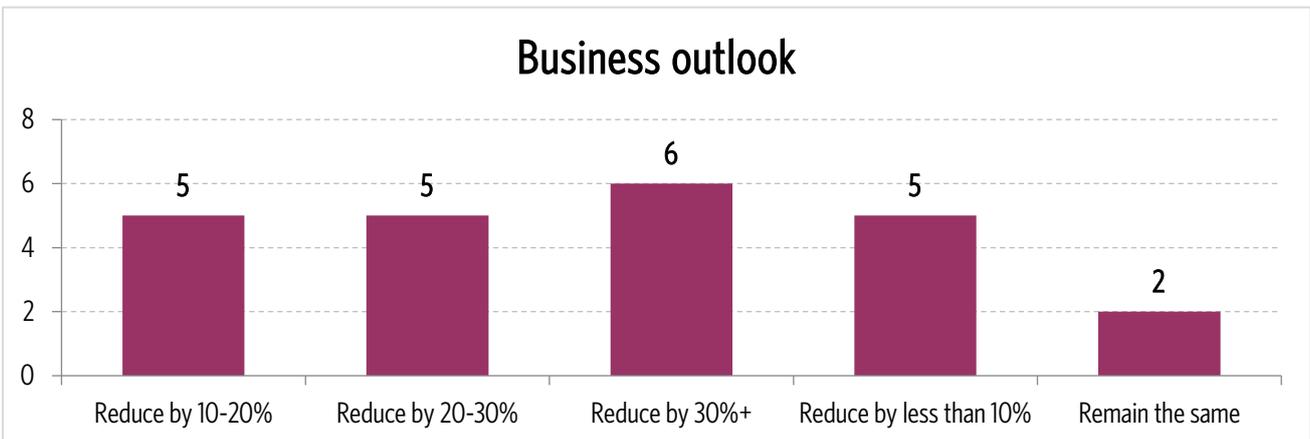
Since the COVID-19 outbreak, a significant majority of respondents (63%) witnessed an increase in receivables. Of these, roughly half saw an increase in receivables of more than 20%. While there was an increase in receivables, a majority of respondents (53%) did not report an outright default on payments by customers. Around 25% reported defaults from a few customers, while only 5% reported defaults from more than 20% of their customers.



In cases of payment default by CapEx/PPA customers, respondents found that offering a complete moratorium during the lockdown period was the most efficient method to resolve the issue of defaulting customers. In cases of payment defaults from OpEx/PPA customers, the most oft-cited reason was the loss in income or revenue during the shutdown.



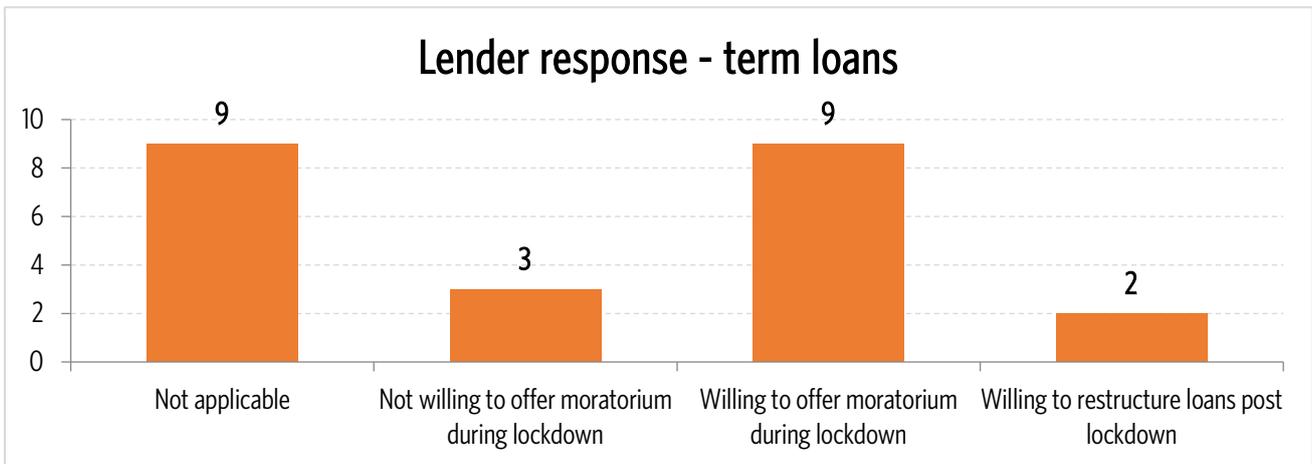
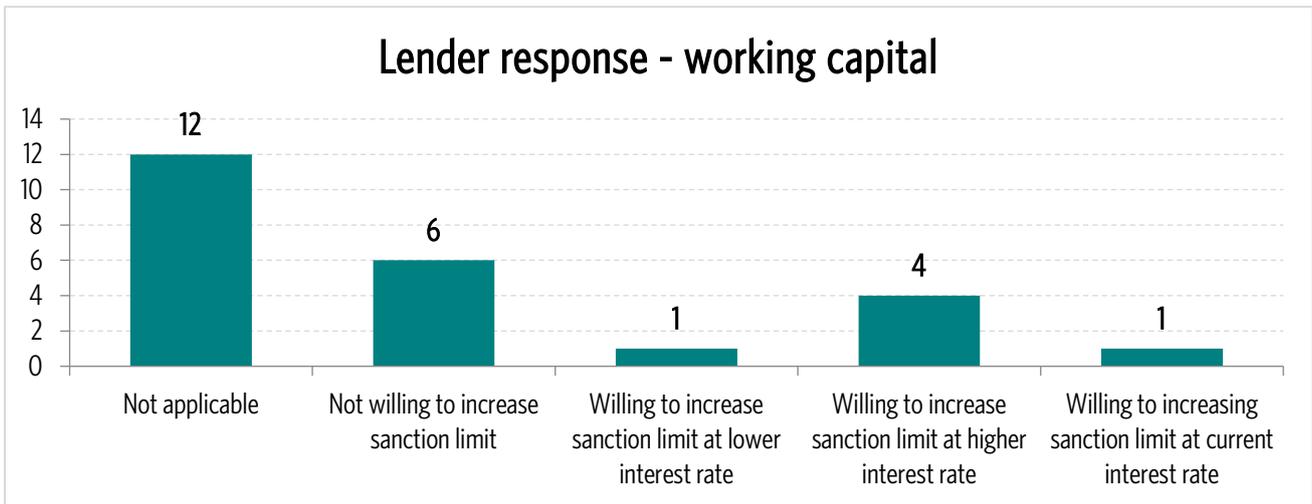
Looking forward, the impending prospect of partial lockdowns and reduced economic activity in the future is a cause for significant concern for the respondents. A large number of respondents (35%) believe that this could diminish the sales pipeline and order book by 30% or more.



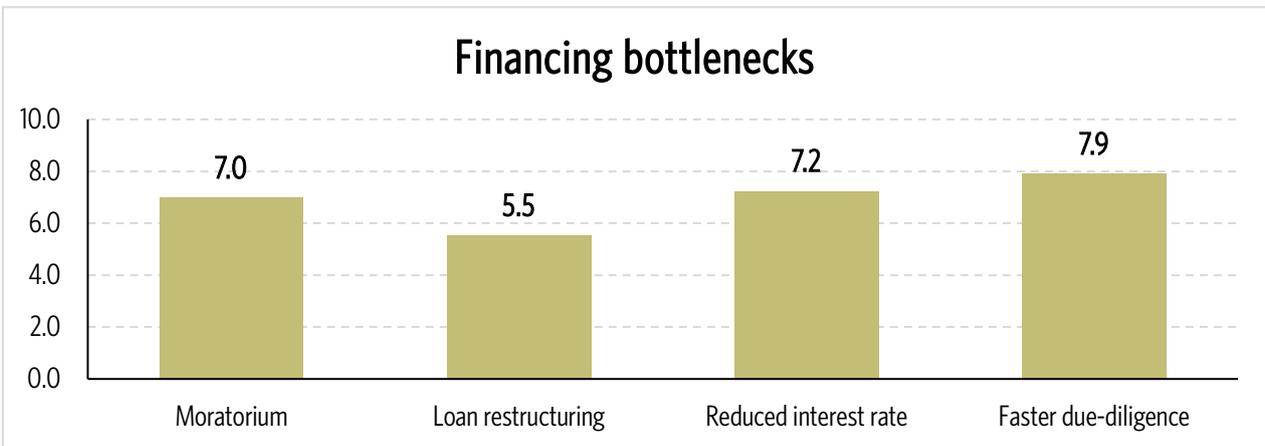
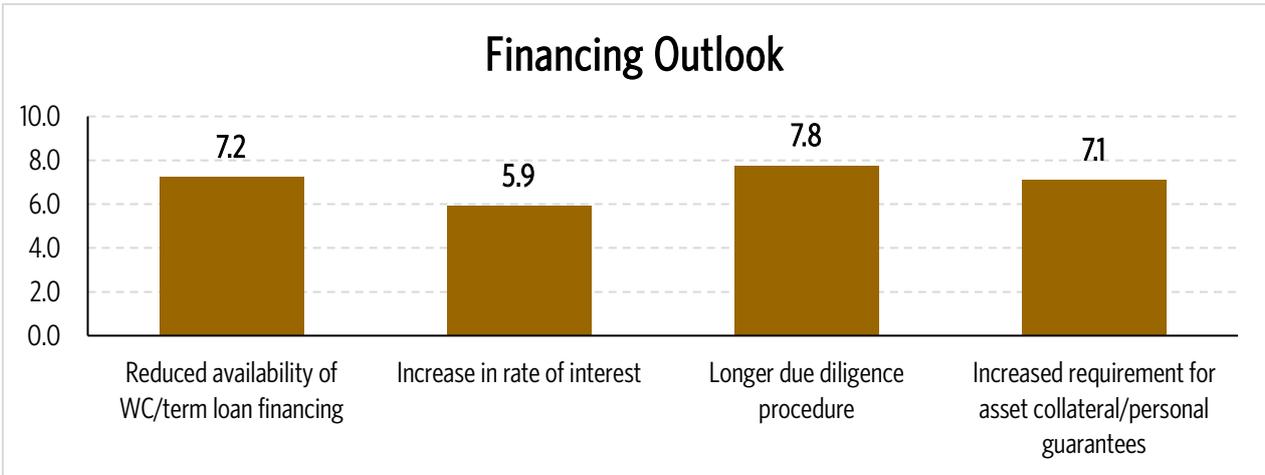
2.2 Financing Challenges

While the majority of respondents (63%) did not need additional working capital, a significant number of those who needed it were unable to convince banks to increase sanction limits.

Amongst respondents with existing project term loans, the majority were able to benefit from a moratorium or restructuring during the lockdown period.

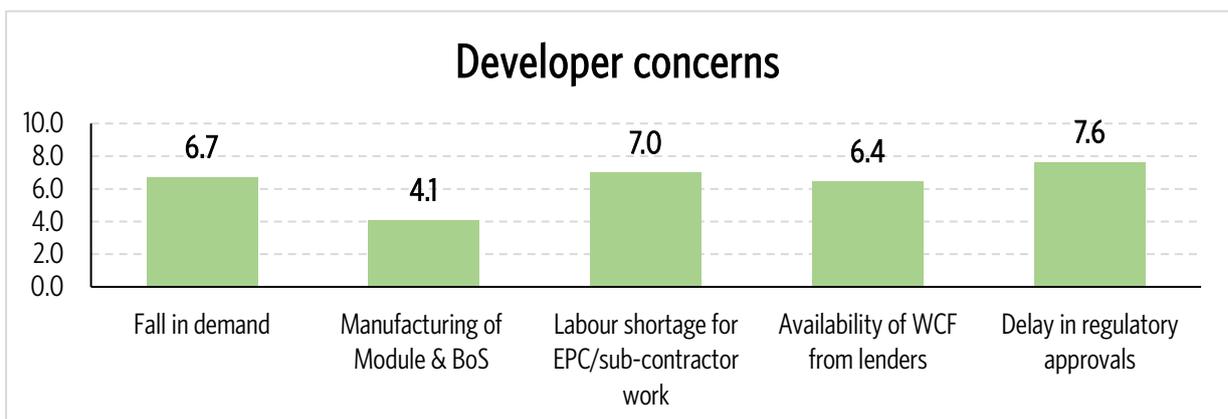


Over the course of the next year, under a scenario of partial lockdown and reduced economic activity, longer due-diligence processes are expected to result in significant negative impact. Reduced availability of financing or increased loan collateral requirements are expected to follow. The respondents expect positive lender actions such as faster due diligence and reduced interest rates to create the maximum positive benefit.

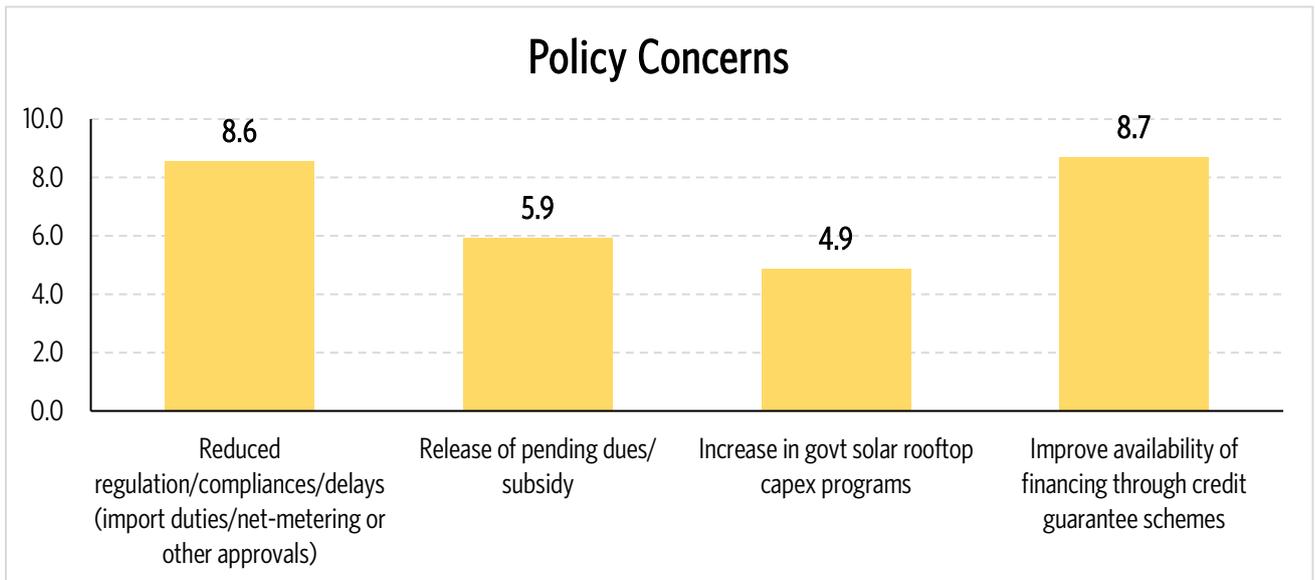
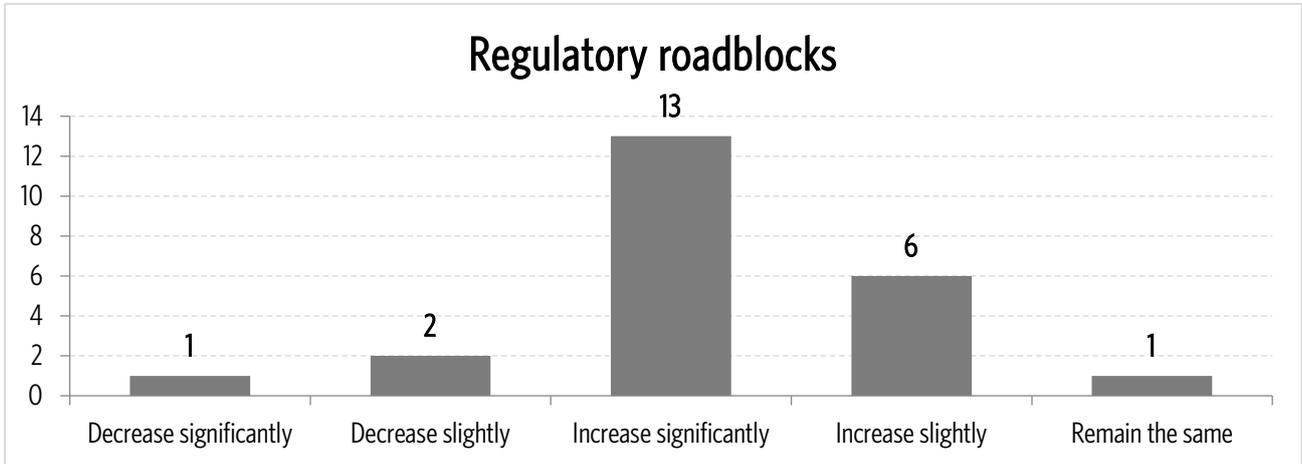


2.3 Government/Policy Response Required

Under a continuing scenario of partial lockdowns and reduced economic activity, respondents expect delays in government regulatory approvals to become the most significant bottleneck next year. This may be followed by labor shortages in EPC and sub-contracting due to rural migration during the lockdown. Most respondents believe that if the government bandwidth remains entangled with managing the fallout from a lockdown next year, and consequent on issues such as net-metering approvals and disbursement of subsidies and other payments.

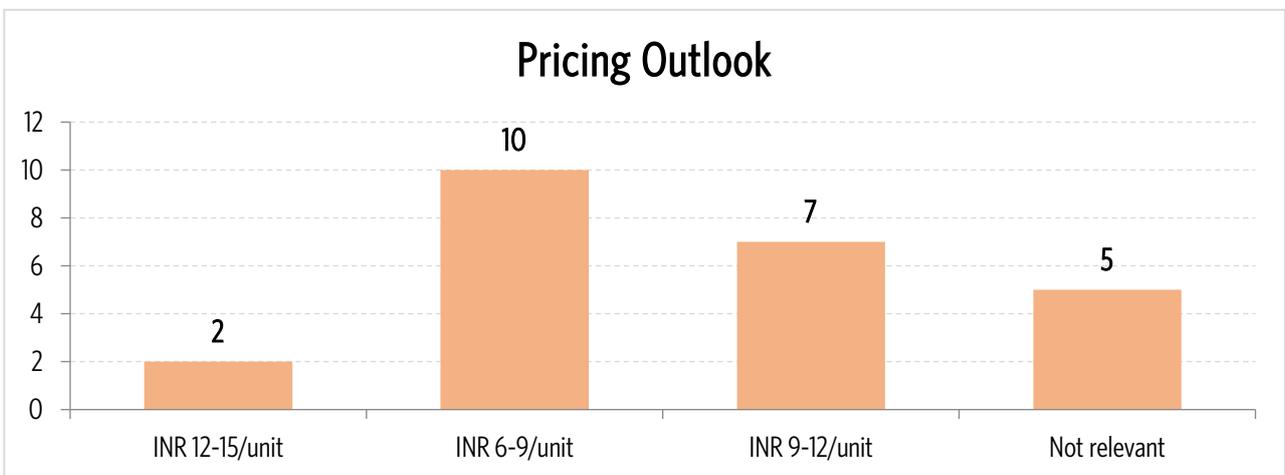
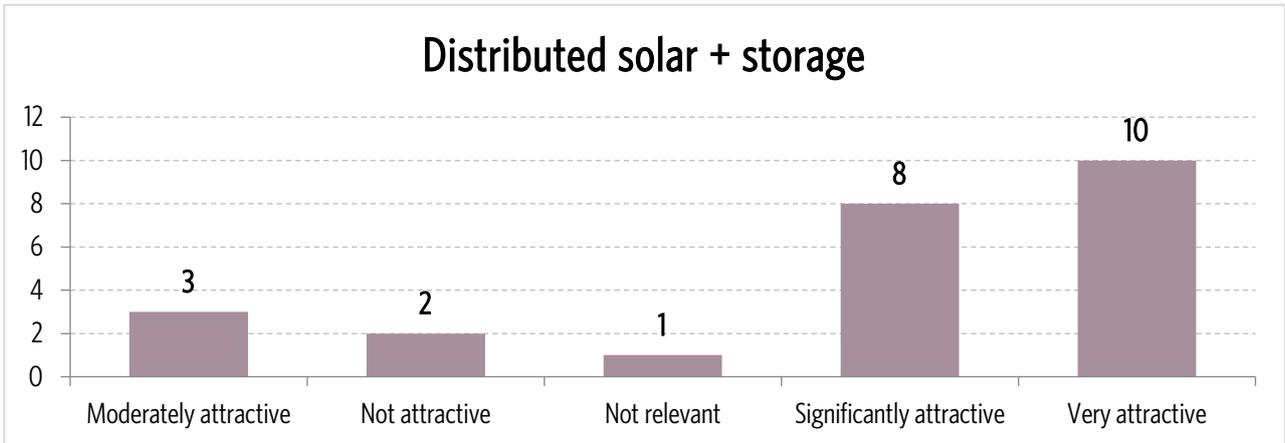


Respondents estimate that positive government actions over the next year such as improved availability of credit through credit guarantee schemes, as well as reduced regulatory and compliance roadblocks such as import duties and net-metering approvals, would provide the maximum benefit.



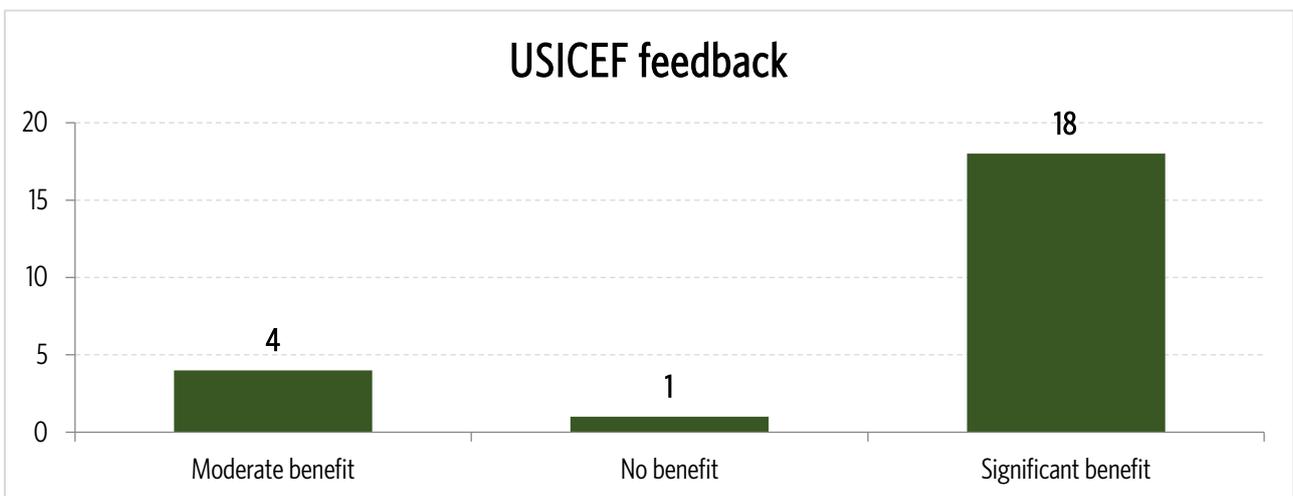
2.4 Future DRE business model

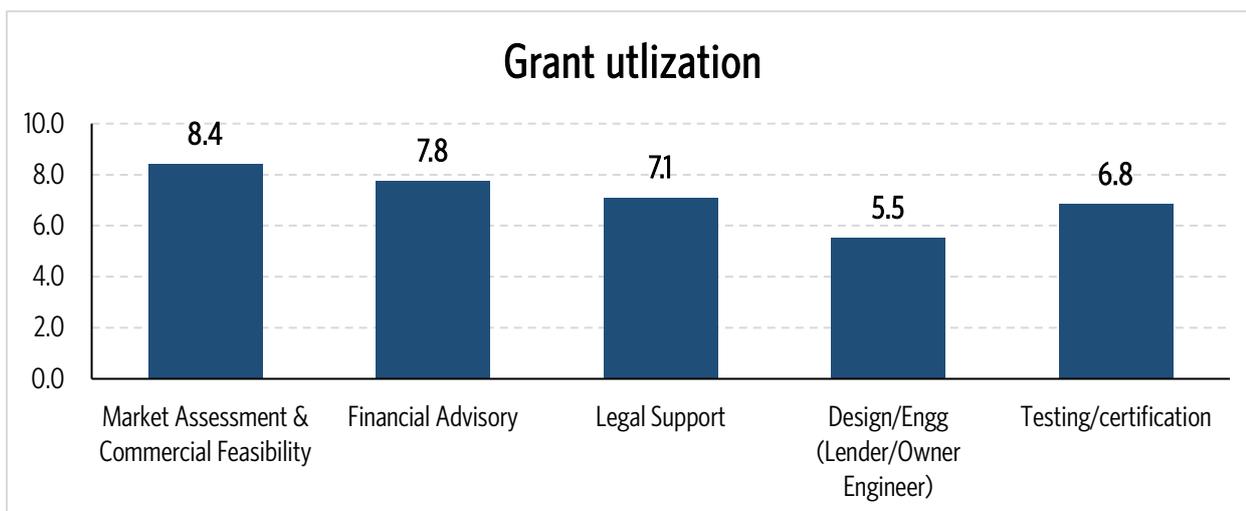
The majority of respondents expect the solar rooftop and energy storage market to become significantly attractive over the next few years. Most of the respondents who were interested in solar rooftop and battery storage expect the viable cost of a typical distributed system (1MW solar + 250 kw/4hr storage) to reach INR 6-9/unit in the coming years.



2.5 Feedback on USICEF

An overwhelming number of respondents reported that they found the USICEF program to be instrumental to their project development activities. They would benefit immensely from additional USICEF grants, especially for transaction services such as market assessment or commercial feasibility studies and financial advisory support.





Conclusion

The survey helped the USICEF team to gain a more accurate understanding of the prevailing market sentiments. During the COVID-19 lockdown period, the respondents experienced a mix of demand, policy and financing roadblocks that created balance sheet and liquidity constraints. The respondents anticipate the coming year with cautious optimism, and with concern regarding future government actions and lender responses that outweigh positive sentiment around a possible uptick in demand.

In such an uncertain environment, developers would benefit from further USICEF support, both in the form of tangible grants as well as intangible commitments. This is particularly relevant with regards to transaction advisory and policy advocacy. In the event of evaluating a possible iteration to the USICEF Program, due consideration could be given to a success-based returnable grants model. This would not only allow for better targeting and risk-hedging towards financial closure but also allow grants to be recycled, and enhance both the duration and magnitude of the impact.

Annexure

I. Subjective Views of Respondents on Distributed Solar Energy

1. "Distributed Solar and storage is important but it **needs to be cost effective**. The company is looking at **pilot projects** in this area."
2. "**Distributed solar plus storage will grow significantly** if the government encourages it with **net metering and capital subsidy schemes**."
3. "Over the next few years, we expect **the distributed solar rooftop (solar and storage) to significantly pick-up**. MNRE draft guidelines for **off-grid solar under the RESCO model runs along these lines**. Although it is applicable only to public service buildings i.e. schools, colleges, hostels, police stations and other public service institutions, at this point, the same model can be implemented in other distributed rooftop projects as well. The good thing is that they have explicitly said that EE DC appliances shall be used."
4. "**Government driven programs, continuation of subsidy, ease of subsidy process, and avoiding any import duty** on solar equipment will be major factors that decide the growth of the rooftop solar market over the next few years. I believe that **PPA and the government market will thrive**, while the **SME market will remain at a lower level**, as it is now."
5. "The growing **differential between solar and grid tariffs** will continue to drive demand in the medium to long term. Government schemes to promote DISCOMs to promote solar will have added benefits. However, the government needs to continue its **focus on the rooftop sector and not tradeoff with large scale solar**. In the long term, rooftop will create the most value for India to achieve its climate goals."
6. "Extremely bullish ... there is really no other viable alternative for the planet."
7. "Speaking for the residential sector, the customers are ready to purchase it. There is some **uncertainty with the policies and subsidies** but we see that the demand has remained almost the same. More than the COVID-19 crisis, threats to this industry are **the regular tinkering of policies, delays in subsidies and net metering permissions, component price fluctuations and unnecessary local competition**.
Hope the government smooths out regulation and moves out of this business, allowing companies to grow the market. Most of the **subsidies haven't been disbursed to the integrators**, putting enormous pressure on businesses already working at a thin margin. I expect the market to pick up and flourish over the long term, provided **the subsidies are removed**, policies are not regularly changed and a simple market mechanism is established."
8. "It is clear that the **technology is improving** and that the costs are coming down. I think that the **DISCOMs are going to fight** this as this segment grows. Hence, I think **that the percentage of captive projects** is going to increase drastically over the coming years."
9. It is "poised to grow significantly due to the **increasing tariffs in the residential sector and decline in costs**."

10. “The rooftop solar business is highly attractive in terms of **cost savings** and **impact on the environment**. With improved government policies, increased awareness and lower rates of installations, we feel that the outlook will become more positive. However, a couple of factors like **financing availability** and **better government policies** will play an equally important role.”
11. “It will **grow significantly** in the next five years.”
12. “The distributed solar rooftop market will grow significantly provided **net metering regulations** are made easy, from the implementation and certainty perspectives.”
13. “Lots of promises. But we need **suitable financial products** to accelerate the residential rooftop solar market.”

II. Subjective Feedback from Respondents on the USICEF Program

1. “It has been a great program. It needs to extend the grant to cover transaction costs related to the refinancing of assets.”
2. “The program has been tremendously beneficial to us and we wish the government to continue the same.”
3. “It is a good program. We are engaging in project preparation services that span highly technical engagements such as the development of credit risk assessment tools to the development of a risk pricing framework. These pertain to highly strategic assignments such as the formulation of sales strategies and designing a comprehensive go-to-market strategy.”
4. “The program has done great work with helping enterprises discover new capabilities and tools. It needs to be expanded to other types of technology companies and aggregators who share the same mission.”
5. “The USICEF program was absolutely pivotal to our firm being able to successfully cross the bridge to transaction realization with international partners. As many new renewable technologies emerge (storage et al), we would recommend expanding the scope of the USICEF program to include pilot project financing... Successful pilots and realized POCs are key to successful closures with international as well as domestic investment partners.”
6. “Our experience so far has been extremely positive. The USICEF representative has been quite helpful, responsive to all our queries and has supported us well throughout the process.”
7. “The due diligence aspect was and is extremely helpful. The next stage is to help facilitate matching lenders and developers.”
8. “This is a great initiative!”
9. This “has been a satisfactory experience. We look forward to coming back for more funding for future projects.”

10. **“The USICEF program is very well structured and organized. The implementation is also quite satisfactory.** However, there should be a periodic evaluation of the empaneled service providers in terms of responsiveness and competence. There are many service providers who are not responsive to the RFPs and mails regarding them. This way of working with regards to the program should be discouraged, or CPI should ensure that they follow up and ensure that the minimum required RFPs are obtained.”
11. “Additional grant funding for previous awardees.”
12. It is a **“lifeline for small companies. Extremely useful.”**
13. **“The USICEF program is a wonderful program that helps address the gaps in the market for rooftop project development.** Any form of credit guarantee mechanism would go a long way towards addressing the capital deficit that is plaguing the sector.”
14. **“The program helps small players like us to access key sources of funds to help develop capabilities that can accelerate our journey to become mid-tier players.”**
15. The **“USICEF program is tremendously supportive and relevant to small and mid-sized players like us.”** We are **“able to actually get the right service providers to support, analyze and hand-hold the developer until project completion, and get the right financing in place.”**

III. List of Questions in the Survey

1. Which of the below is your primary customer segment?

- C&I
- Residential & SME
- Govt/Institutional
- Mini grids/Home systems
- Other: _____

2. Which of the below is your primary business model?

- CapEx sales
- OpEx - PPA based
- OpEx - deferred financing
- O&M
- Other: _____

3. Since the Covid-19 outbreak (March'20), what has been the impact on your receivables?

- Increased by less than 0-10%
- Increased by 10-20%
- Increased by more than 20%
- Has reduced
- Not applicable

4. Since the Covid-19 outbreak, has there been any customer defaults for your OPEX contracts (PPA/deferred payment) ?

- Default by less than 0-5% of customers
- Default by 5-10% of customers
- Default by 10-20% of customers
- Default by more than 20%+ customers
- Not applicable

5. In cases of default by customers under OPEX contracts (PPA/deferred payment), please rate on a scale of 0-4 below, the most relevant ways for your business to resolve/cure the default ? (0-not relevant, 4- significantly relevant)

	0	1	2	3	4
Complete moratorium during lockdown period	<input type="radio"/>				
Reduced tariffs during lockdown period	<input type="radio"/>				
Re-negotiation of PPA tariffs post lockdown	<input type="radio"/>				
Termination of agreement	<input type="radio"/>				

6. In cases of default by customers under OPEX contracts (PPA/deferred payment), please rate on a scale of 0-4 below, the major concerns of customers? (0-not relevant, 4- significantly relevant)

	0	1	2	3	4
Loss of income/revenue due to business shutdown	<input type="radio"/>				
Lack of clarity on govt policy around covid/lockdown	<input type="radio"/>				
Lack of confidence on future govt policy around covid/lockdown	<input type="radio"/>				
Lack of availability of short term financing from banks	<input type="radio"/>				

7. What has been the response of lenders on your request for any additional working capital loans?

- Willing to increasing sanction limit at current interest rate
- Willing to increase sanction limit at lower interest rate
- Willing to increase sanction limit at higher interest rate
- Not willing to increase sanction limit
- Not applicable

8. What has been the response of lenders to your existing project term loans?

- Willing to offer moratorium during lockdown
- Not willing to offer moratorium during lockdown
- Willing to restructure loans post lockdown
- Not willing to restructure loans post the lockdown
- Not applicable

9. Over the next 1 year, assuming we operate in a situation of partial lockdowns and/or reduced economic activity, please rate on the scale of 0-4 below, the level of impact you expect to face in project execution on each of the following parameters. (0- no impact, 4- significant impact)

	0	1	2	3	4
Fall in demand	<input type="radio"/>				
Manufacturing of Module & BoS	<input type="radio"/>				
Labour shortage for EPC/sub-contractor work	<input type="radio"/>				
Availability of WCF from lenders	<input type="radio"/>				
Delay in regulatory approvals	<input type="radio"/>				
Possibility on another complete lockdown	<input type="radio"/>				

10. Over the next 1 year, assuming we operate in a situation of partial lockdowns and/or reduced economic activity, please rate on the scale of 0-4 below, the level of concern/impact for your business on each of the following possible lenders responses. (0- no impact, 4- significant impact)

	0	1	2	3	4
Reduced availability of WC/term loan financing	<input type="radio"/>				
Increase in rate of interest	<input type="radio"/>				
Longer due diligence procedure	<input type="radio"/>				
Increased requirement for asset collateral/personal guarantees	<input type="radio"/>				

11. Over the next 1 year, assuming we operate in a situation of partial lockdowns and/or reduced economic activity, what impact due you expect on the turnaround time for matters that require government/regulatory actions (such as net metering approval, disbursal of subsidy).

- Increase slightly
- Increase significantly
- Decrease slightly
- Decrease significantly
- Remain the same

12. Over the next 1 year, assuming we operate in a situation of partial lockdowns and/or reduced economic activity, what impact do you see on your sales pipeline/order book?

- Reduce by less than 10%
- Reduce by 10-20%
- Reduce by 20-30%
- Reduce by 30%+
- Remain the same

13. Please rate on the scale of 0-4 below, the relevance/benefit of possible government actions for your business over the next 1 year? (0-no relevance/benefit, 4 - significant relevance/benefit)

	0	1	2	3	4
Reduced regulation/compliances/delays (import duties/net-metering or other approvals)	<input type="radio"/>				
Release of pending dues/subsidy	<input type="radio"/>				
Increase in govt solar rooftop capex programs	<input type="radio"/>				
Improve availability of financing through credit guarantee schemes	<input type="radio"/>				

14. Please rate on the scale of 0-4 below, the relevance/benefit of possible lender actions for your business over the next 1 year? (0-no relevance/benefit, 4 - significant relevance/benefit)

	0	1	2	3	4
Moratorium	<input type="radio"/>				
Loan restructuring	<input type="radio"/>				
Reduced interest rate	<input type="radio"/>				
Faster due-diligence	<input type="radio"/>				

15. Going forward, what benefit would you see from additional USICEF grants?

- No benefit
- Marginal benefit
- Moderate benefit
- Significant benefit
- Not applicable

16. On a scale of 0-4, please rate the benefit for your business of the following activities, if further USICEF grants were available? (0- no benefit, 4 - significant benefit)

	0	1	2	3	4
Market Assessment & Commercial Feasibility	<input type="radio"/>				
Financial Advisory	<input type="radio"/>				
Legal Support	<input type="radio"/>				
Design/Engg (Lender/Owner Engineer)	<input type="radio"/>				
Testing/certification	<input type="radio"/>				
Environment/Social Impact Assessment	<input type="radio"/>				

17. How do you see the battery storage + solar rooftop market evolve over the next few years?

- Not attractive
- Moderately attractive
- Very attractive
- Significantly attractive
- Not relevant

18. What do you see as a viable cost of distributed solar + storage (1MW solar + 250 kw/4hr storage)

- INR 6-9/unit
- INR 9-12/unit
- INR 12-15/unit
- INR 15+/unit
- Not relevant

19. Please share briefly your views on the outlook for distributed solar rooftop market over the next few years.

Your answer

20. Please share briefly your feedback/suggestion on the USICEF program

Your answer
