



# Extended Annual Review Report

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Project Numbers: 46931-014 and 49238-001  
Investment Number: 7381  
Loan Number: 8298  
November 2020

## Simpa Networks Inc. and Simpa Energy India Private Limited Off-Grid Pay-As-You-Go Solar Power Project and Off-Grid Prepaid Solar Leasing Project (India)

This is an abbreviated version of the document, which excludes information that is subject to exceptions to disclosure set forth in ADB's Access to Information Policy.

**Asian Development Bank**



## CURRENCY EQUIVALENTS

Currency unit – Indian rupee (₹)

		<b>At Appraisal</b> (2 Nov 2015)	<b>At Operations Evaluation</b> (26 May 2020)
₹1.00	–	\$0.015	\$0.013
\$1.00	–	₹65.61	₹75.7

## ABBREVIATIONS

ADB	–	Asian Development Bank
COVID-19	–	coronavirus disease
EHS	–	environmental, health, and safety
EIRR	–	economic internal rate of return
kWh	–	kilowatt-hour
PAYGO	–	pay-as-you-go
SHS	–	solar home system
Simpa	–	Simpa Energy India Private Limited

## NOTES

- (i) The fiscal year (FY) of Simpa Energy India Private Limited ends on 31 March. “FY” before a calendar year denotes the year in which the fiscal year ends, e.g. FY2020 ends on 31 March 2020.
- (ii) In this report, “\$” refers to United States dollars.

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## BASIC DATA

### Off-Grid Pay-As-You-Go Solar Power Project and Off-Grid Prepaid Solar Leasing Project (Investment Number 7381 and Loan Number 8298 – India)

Key Project Data	As per ADB Project Documents (\$ million)	Actual (\$ million)
Equity size	2.0	2.0
ADB Investment:		
Committed	2.0	2.0
Outstanding	2.0	2.0
Loan: <sup>a</sup>		
Committed	6.0	6.0
Disbursed	1.5	1.5
Outstanding	1.5	1.5

ADB = Asian Development Bank.

Note: Actual figure is based on the exchange rate prevalent at appraisal in the report and recommendation of the President and outstanding figure is based on 30 September 2020 data.

<sup>a</sup> Loan extended from Clean Technology Fund administered by ADB.

Key Dates	Equity		Loan	
	Expected	Actual	Expected	Actual
Concept Clearance Approval	31 Aug 2012	12 Nov 2012	9 Sep 2015	9 Sep 2015
Board Approval	30 Nov 2012	15 Jan 2013	11 Nov 2015	1 Dec 2015
Execution of Agreements	31 Dec 2012	20 Mar 2013	30 Dec 2015	5 Feb 2016
First Disbursement	31 Dec 2012	20 Mar 2013	15 Jan 2016	10 Mar 2016

Project Administration and Monitoring	Number of Missions	Number of Person-Days
Due Diligence and Appraisal	3	30
Negotiations and Signing	2	20
XARR Mission	0	0

XARR = extended annual review report.

Note: number of missions and person days estimated based on size and nature of debt and equity investment.



## EXECUTIVE SUMMARY

In January 2013, the Asian Development Bank (ADB) Board of Directors approved an equity investment of up to \$2 million in Simpa Networks Inc., the holding company of Simpa Energy India Private Limited (Simpa), with an expected investment tenor of 7–9 years. In December 2015, the Board also approved a loan of up to \$6 million from the Clean Technology Fund administered by ADB to Simpa with a tenor of 7.5 years. The equity and the loan were extended for scaling up of Simpa's operations.

According to the Government of India's Ministry of Power, nearly 60 million households (about 300 million people) in India were unelectrified in 2016. A majority of this large underserved population relies on kerosene for lighting, which is unhealthy, polluting, and relatively expensive. Simpa provides a simple, accessible, and affordable solar-energy-based electricity solution in those rural areas where grid connections are absent or unreliable. Simpa's main product is an off-grid solar home system (SHS) comprising a solar panel installed on the rooftop coupled with battery storage and metering, which can be accessed on a prepaid basis via short-messaging-service-based recharge and top up. The SHS unit can be used for basic lighting, charging of devices, and operating a small fan. ADB's assistance to Simpa aligned well with the strategic objectives and country partnership strategies for India, 2009–2012 (for equity investment) and 2013–2017 (for loan), as it provided a sustainable and inclusive energy access solution with the prospect of scaling up and replicating the solution in other developing countries.

However, the growth of the off-grid industry in India between 2015–2020 has been affected by (i) the expansion of electrification (100% achieved by 2018 according to the Government of India), (ii) the improvement in grid reliability over the years, (iii) the liquidity crunch faced by non-banking finance companies, and (iv) the reduction in government procurement. Consequently, sales volumes of off-grid products have declined in the period.

At the time of equity investment, Simpa was an early-stage start-up with an innovative product, which had been piloted successfully in rural areas of Karnataka state in India. Simpa sold its SHS units through channel partners. The equity investment of \$2.0 million was extended in 2013 as part of the \$6.3 million investment required for achieving the sale of 29,000 SHS units and the expansion of the micro-grid metering business by 2014. Simpa did not achieve the expected expansion targets even though sales were growing in 2015 after changes in business strategy. ADB's loan of \$6 million was approved in December 2015 for part-funding the expansion to 75,000 unit sales in 2016. Simpa also successfully raised Series C financing in 2016 with an investment of about \$13 million.

However, Simpa underperformed significantly on the expected sales and business expansion. Continued underperformance and expanding losses with low revenues led to a loss of investor confidence and Simpa could not close the Series D financing round in 2017. It ran out of cash in July 2018 and was subsequently acquired at a deeply discounted price in November 2018.

The project's environmental, social, health, and safety performance is satisfactory. The project has complied with local and national laws and has recorded zero lost-time injuries since 2015.

ADB's 7.5-year commercial loan and \$2 million equity investment were not readily available to an early-stage company like Simpa. Simpa benefitted from ADB's participation through the successful Series C financing round, the change in strategy to achieve sales growth, and the tying up off balance-sheet financing from local commercial banks.

ADB's equity and debt were fully impaired by April 2018 and equity value was reduced to nil after Simpa's acquisition by a new investor in November 2018 at a deep discount. ADB's debt has been restructured and with the release of all securities during restructuring, the debt has become unsecured.

ADB's investment was not accompanied by an identified business model and investment plan. Industry- and geography-specific risk factors were not adequately assessed, even though the investment had a high impact potential via social and economic benefits resulting from clean, affordable, and reliable off-grid energy access.

Evolving business models and losses in the initial period is typical of early-stage start-ups, however, differentiating factors and value drivers of the investee company should be identified clearly. ADB teams should clearly establish and validate the amount of investment required in various areas of business and the disbursements should be tied to milestone achievement. A framework for greater ADB involvement should be devised in case of equity investments. Given the high risk of failure in early-stage investments, a sector-specific framework should be adopted for early-stage investments with multiple investments in alternate business models. The framework should differentiate between different geographical regions as one solution may not suit all markets even though some market-driving indicators may be similar.

## I. THE PROJECT

### A. Project Background

1. In January 2013, the Asian Development Bank (ADB) Board of Directors approved an equity investment of up to \$2 million in Simpa Networks Inc., United States, the holding company of Simpa Energy India Private Limited (Simpa), with an expected investment tenor of 7–9 years. In December 2015, the Board also approved a loan of up to \$6 million from the Clean Technology Fund administered by ADB to Simpa with a tenor of 7.5 years, including a grace period of 3.5 years.

2. Simpa provides simple, accessible, and affordable solar-energy-based electricity to underserved rural customers where grid connections are absent or unreliable. Simpa's main product is a solar home system (SHS), comprising a solar panel installed on the rooftop coupled with battery storage and metering, which can be accessed on a prepaid basis with mobile phone and short messaging service (SMS)-based recharge and top up. The unit can be used for basic lighting, running a small fan, and charging mobile devices. The SHSs can be bought with cash or under a leased pay-as-you-go (PAYGO) model where the customers make a small down payment (\$3–\$40, depending on the system size) and can pay per use on a monthly basis (\$2–\$15, depending on the system size) with ultimate ownership of the system typically achieved after 36 monthly recharges or top ups.

3. In 2012, more people in India lacked access to electricity than in any other nation in the world—the International Energy Agency estimated the number at 304 million, most of whom live in rural areas outside the reach of conventional electricity grid networks. According to the Government of India's Ministry of Power, nearly 60 million households (about 300 million people) in India continued to be unelectrified in 2016. The majority of this large underserved population relied on kerosene for lighting, which is unhealthy, polluting, and relatively expensive. The lifetime cost of kerosene lanterns over a 10-year period is higher than that of SHSs,<sup>1</sup> however, the cost of energy through SHSs is higher than the cost of electricity provided by the grid for electrified areas in India.

4. The growth in the global solar lighting and SHS market has been driven by growth in the African region while the South Asia market led by India has been seeing a decline in sales volumes since 2018. An increase in rural electrification (100% by 2018, according to the Government of India) and a reduction in funds availability because of a liquidity crunch faced by non-banking finance companies and microfinance institutions in India and discontinuation of government procurement of off-grid products in India are expected to have contributed to contraction in the Indian market.

### B. Key Project Features

5. At the time of equity investment appraisal in 2012–2013, Simpa was an early-stage start-up company and the operations were loss making. An equity investment by ADB in Simpa was expected to help scale the operations and Simpa would have also benefited from the bank's knowledge in the development sector with an ADB nominee director on the board. The investment, if successful, was expected to help in developing inclusive and sustainable energy access solutions that could be replicated in other developing member countries. Simpa was the only

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<sup>1</sup> International Finance Corporation. 2012. *Lighting Asia: Solar Off-Grid Lighting*. pp. 40–41.

wholly owned subsidiary of Simpa Networks Inc., founded in 2010 by Paul Needham (an infotech entrepreneur who was also the CEO), Jacob Winiiecki, and Michael Macharg.

6. On a consolidated basis, Simpa Networks Inc. had revenue of \$0.5 million in FY2015 and the operations were loss making. Simpa's board had six directors in August 2015, including founder and CEO Paul Needham, and three investor nominees (including an ADB nominee director).

7. At the time of the equity investment appraisal in 2012, Simpa had installed 167 SHS units in rural areas of Karnataka state. Simpa planned to install an additional 29,000 units in 2014 and 88,000 units in 2015 and attain profitability in the same year (which would mean FY2016 would be the first profitable financial year). ADB's equity investment of \$2 million formed part of the \$6.3 million of funding required for selling SHS units out of which \$1.6 million had already been raised from other sources and discussions were underway for the remaining financing.

8. The equity investment of \$2 million was infused via a share purchase agreement in March 2013 under a Series B fund raise,. The agreements also stipulated one ADB representative in a seven-member board. Exit was expected in 7–9 years. The likely exit option was the sale of the company to a strategic buyer wanting to establish a channel to access rural off-grid consumers. Other exit options included a secondary sale or an initial public offering.

9. The company planned to achieve profitability in 2017 with further expansion for which financing would be raised separately. ADB approved a loan of \$6 million for financing part of the debt requirement for the 2016 expansion. This debt facility, extended by ADB to Simpa in 2015, was secured by guarantee of the parent company, Simpa Networks Inc.; first priority lien over ADB-financed solar units; pledge of Simpa shares; and a charge over payment waterfall accounts. ADB disbursed \$1.5 million in March 2016. Repayments were to commence in September 2019.

### **C. Progress Highlights**

10. In March 2013, right after ADB's equity investment, Simpa had planned to change its geographic focus from Karnataka (a state with an electrification rate of 91%) to Uttar Pradesh (a state with an electrification rate of 37%). However, it sold less than 1,700 SHS units between April 2013 and March 2014. At the time of the equity investment, Simpa had also planned to reach about 33,000 households through solar micro-grids by 2014. However, Simpa decided to defer its business-to-business micro-grid development business because the market was not deep enough and required high investment.

11. Simpa changed its business strategy to push sales and decided to set up its own sales and distribution network rather than relying on channel partners. In 2014, Simpa set up eight branches in Western Uttar Pradesh staffed by sales managers who were supported by village-level partners referred to as *Urja Mitras*. The sales managers were full-time employees pushing the product through *Urja Mitras* working on a per sale commission basis. The branches handled customer acquisition, credit review, and installation and servicing of the SHSs in their area.

12. The change in sales strategy brought volume growth in 2015 and Simpa installed more than 12,000 SHSs during April–August 2015 and was on its way to achieve 30,000 units by March 2016. Operations became focused on Western Uttar Pradesh and nearby regions where electrification rates were low. However, Simpa did not expect to achieve profitability in 2015 as projected because the sales through the company's own networks had higher overheads and required a higher scale of operations to achieve profitability. Simpa achieved a positive 14% unit

profit margin on per unit sold (unit profit margin includes sales price less cost of goods sold and direct costs; it does not include corporate and branch overheads) via streamlining of operations. Overall, Simpa was still making losses because the unit profits could not cover branch and corporate overheads. The company expected to achieve profitability in 2017 via increasing sales and further improving the unit margin to 30% or more by streamlining of operations and through the expected decline in photovoltaic-panel prices. The plan involved increasing sales per branch and expanding the branch network to 177 districts. The revised expansion plan had the target of selling more than 75,000 units in 2016, 122,000 units in 2017, and achieving profitability in that same year (i.e., FY2018 would be the first profitable financial year).

13. At the time of ADB's loan appraisal, Simpa was looking to tie up financing of \$24 million to fund its 2016 sales target of more than 75,000 units. Funding for the 2017 expansion was expected to be raised separately via Series D financing by early that year. Simpa planned to finance the 2016 expansion via a debt of \$10.5 million, equity of \$5.0 million, and internal accruals of \$8.5 million. In December 2015, ADB approved a loan of \$6.0 million for part financing of the 2016 expansion, of which \$1.5 million was disbursed in March 2016. However, Simpa continued to underperform substantially on sales targets and business plan objectives. Further disbursements of the ADB loan were withheld.

14. Simpa raised about \$13 million in Series C financing in 2016 from existing and new investors (ADB did not participate in the round).

15. Though the funding often came in the later part of each year and actual funding has been a little short of the business plan, Simpa was nevertheless able to raise substantial financing to achieve scale. However, the actual performance was only a fraction of the baseline expectations.

16. Sales performance improved with the addition of 12 new branches in late 2017 and a \$1 million enhancement of the off-balance-sheet financing limit from a local commercial bank. Simpa suffered from poor performance on the lease of sold units with 25%–30% of customers falling behind their payment schedules within a year. Improvement in the customer acquisition process reduced the slippages.

17. Simpa planned to raise about \$10 million in Series D financing in the first half of 2017, however, it was unable to close the funding round successfully. ADB held back further disbursements and Simpa ran out of cash in July 2018. Engie Group acquired 90% of Simpa in November 2018 at a discount, effectively wiping out the value for existing shareholders. ADB's outstanding debt of \$1.5 million was restructured. As part of the restructuring, all the security was released and the repayment schedule was revised such that the repayment will be starting in June 2025 with eight quarterly installments. ADB's equity and debt investment were both fully impaired by April 2018 and post-acquisition by Engie, ADB's shareholding is effectively nil.

## II. EVALUATION

### A. Project Rationale and Objectives

18. The transaction aligned well with ADB's strategy 2020 under which ADB was committed to expanding the supply of energy in an environmentally sustainable way and it related to two of the core focus areas—infrastructure and environment.<sup>2</sup> The transaction aligned well with country partnership strategy for India, 2009–2012. The transaction also aligned well with the country

<sup>2</sup> ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020*. Manila.

partnership strategy for India, 2013–2017, which highlighted access to energy as one of the key areas of ADB’s engagement.<sup>3</sup> At the time of the loan appraisal, the company was also running a referral coupon program for women customers and had planned to run community engagement programs for women at the branches. The transaction was an opportunity for scaling up a low-emission inclusive energy access solution for underserved households and could have had a high development impact with a possibility of replication in other developing countries.

## **B. Development Results**

### **1. Contributions to Private Sector Development and ADB Strategic Development Objectives**

19. Within the private sector development results framework, the transaction had the most direct relationship to the promotion of innovation, i.e., new or improved infrastructure design or technology, demonstration effects of successfully scaling up an off-grid solar energy solution, reduced emissions with replacement of kerosene by solar energy, and impact on inclusion with better access to electricity for rural and underserved areas.

20. The company’s achievement of the outputs and outcomes has been substantially lower than the targets because of underperformance on the business plan. Consequently, other targets flowing from off-grid solar capacity addition, such as reduced emissions, local procurement, and employment, have also been underachieved. Actual achievements in outputs and outcomes versus the design and monitoring frameworks for both debt and equity appraisals are given in Appendix 7.

21. Overall there have been substantial shortcomings in meeting the stated outputs and outcomes, although the investment is likely to have resulted in intangible social and economic benefits via solar off-grid energy access, which cannot be quantified. The outcome of a financially viable energy services company could not be achieved.

### **2. Environment, Social, Health, and Safety Performance**

22. ADB’s due diligence, conducted in 2015, found Simpa to have the institutional capacity and commitment for environmental and social management. The activities of the proposed project have minimal or no adverse environmental, health, and safety impacts. The installation of SHSs was expected to reduce greenhouse gas emissions from burning fuel for cooking and lighting. Simpa was required to comply with applicable national laws and regulations and with ADB’s Safeguard Policy Statement (2009).

23. During project implementation, Simpa used ADB proceeds to fund only the leasing of SHSs. Simpa implemented the project in accordance with the local and national environmental, health, and safety (EHS) regulations. It has secured the necessary clearance and permits for its operations. There are no reports or records showing that Simpa has been charged or penalized by the Government of India for any violations related to EHS regulations during its operation. The company’s grievance redress mechanism captured 79 complaints, but these were not related to EHS concerns. All of the items were related to field operations (e.g., installation of SHSs). Simpa resolved all of the issues by May 2020.

24. Simpa’s parent company, the Engie Group, has provided health and safety trainings. The health and safety manager of Engie in India also conducts periodic audits on health and safety

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<sup>3</sup> ADB. 2013. *Country Partnership Strategy: India, 2013–2017*. Manila.

policies and practices. Simpa's records from 2013 to 2019 show that the project has had zero lost-time injuries. Recently, because of coronavirus disease (COVID-19), regular health and safety communication schemes are circulated to all employees and new working guidelines are disseminated for field teams.

25. In terms of social safeguards, no lands were acquired, purchased, or leased for the installation of Simpa's facilities because the solar panels were installed on the roof of the customer's house. The project also had no adverse impacts on indigenous peoples. ADB has also noted that Simpa complied with national labor policies and regulations, as well as internationally recognized core labor standards.

26. A gender action plan was developed to capture the gender measures implemented in the project. The details of activities and concrete targets are reported in Appendix 6. Overall, the project has achieved and/or implemented three of the six indicators as of December 2019, as shown in the gender action plan implementation and achievement matrix in Appendix 6.

### **C. ADB Additionality**

27. At the time of the equity investment appraisal, Simpa was an early-stage start-up with potential for scaling up the solar off-grid energy business, improving access to energy for millions of underserved households in India. It is clear from its investor profile that Simpa was an attractive investment for impact investors. ADB's equity investment in Simpa was substantial—it was the single largest investment by any investor until March 2013.

28. Following ADB's equity investment in March 2013, Simpa revised its business strategy from partner-based sales to own-channel sales and achieved significant growth in 2015. It also raised a long tenor debt from a development financing institution in 2014 and successfully closed a Series C financing round in 2016—its largest fund raise since inception. It also managed to tie up a \$1.5 million off-balance-sheet financing arrangement from a local commercial bank. Its unit profit margin improved consistently and was healthy by May 2018.

29. ADB's loan sanction to Simpa with 7-plus years tenor in December 2015 was not available from local commercial financiers. Simpa was subsequently able to successfully close a Series C financing round and tie up off-balance-sheet financing arrangements from local commercial banks. Further disbursements were withheld because of underperformance on the business plans, however, gains from ADB's participation as an investor and lender have been adequate and similar financing was not available from local institutions.

### **D. ADB's Work Quality**

30. Simpa was an early-stage start-up at the time of equity investment. Soon after ADB's equity investment in March 2013, Simpa realized that growth was not possible through the channel partners and started setting up its own distribution model in a new region. The new model was untested and led to major changes in assumptions and delayed profitability. It can be argued that more diligence was warranted on the business plan and the financial model with a focus on validating the assumptions.

31. With the uncertainties over the business plan, it was not clear from the investment rationale as to how the investment would be deployed to achieve growth, i.e., whether it would be used for product development, inventory financing, sales promotion, or channel development. At the time of loan appraisal, Simpa's new business model had started delivering growth but it was

still underperforming with respect to the equity investment. Electrification rates in India had grown from 76% in 2010 to 88% by 2015 and the long-term viability of the business plan could have been validated in light of these developments.<sup>4</sup>

32. ADB received periodic updates and reports from the client. Waivers, amendments and consent requests were considered timely. Separate teams monitored the equity investment and loan. At the time of loan appraisal, the equity investment had already been monitored for more than 2 years and frequent business plan changes in response to underperformance were notable. It could have been an opportunity to understand the frequent changes and challenges in the business. The input could have been valuable to the ADB Board when it was making its decision on the loan proposal in December 2015. It was clear after the first disbursement of the loan in March 2016 that the company was consistently underperforming and further disbursements were prudently withheld.

### III. ISSUES, LESSONS, AND RECOMMENDED FOLLOW-UP ACTIONS

#### A. Issues and Lessons

33. **Identifying the value driver or differentiating factor of the investee.** ADB teams identified that Simpa had the right product in form of SHS units combined with a PAYGO model and technology platform. The distribution model, via the channel partners, was identified at the time of investment. However, the difference between Simpa's product and similar offerings from other players was not clear. The adequacy of this aspect at the time of the investment appraisal in 2012 cannot be established today, hence, for the purpose of this report, it is assumed that Simpa had a competitive product as stated in the investment documents.

34. **Identifying the investment requirement and plan for deployment of funds.** ADB clearly identified Simpa's impact potential as inclusive and sustainable energy access, which was a large and high-impact problem. Simpa, being a start-up, required investment to solve such a problem. While extending \$2 million equity investment for selling 10,000 units, ADB could not identify and validate the plan for the use of the funds in the specific areas of business like procurement, distribution, and service.

35. **Validating assumptions before investing or tying up the investment to validation of such assumptions in early-stage companies.** Every early-stage start-up faces an uncertain environment and business models keep evolving until the requisite scale and maturity is achieved. In Simpa's case, the business model assumed sales growth achievement through channel partners at the time of the equity investment appraisal. It was assumed that there would be sufficient demand from the channel partners, resulting in growth. The assumption could have been validated by either engagement with some of the channel partners or by conducting diligence on order pipelines and identifying why the market has not already achieved the expected scale in India. Diligence could also have been done on whether the smaller number of initial sales resulted from low demand or insufficient financing.

36. **Putting in place mechanisms for greater ADB involvement.** There needs to be a framework in place to allow for a more active involvement of ADB in the investee companies. An alternate framework of shareholder consent rights, management representation and sector experts evaluating and advising on key decisions may be necessary to increase engagement and improve synergies.

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<sup>4</sup> World Bank Database. <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=IN> (accessed 21 September 2020).

37. **Establishing reasons for underperformance.** Since ADB's investment, Simpa had been continuously underperforming on the business plans. It has been argued in this report that the probable reasons were an unproven business model with frequent changes since the unit economics was positive and constantly improving. There is inadequate data for establishing the impact of various factors, including the role played by industry factors, customer profile, payment capacity, and the location of the business.

38. **Identifying risks associated with different geographic areas.** Off-grid solar power has proven to be a more acceptable and scalable solution in the African region because it has the largest share of global sales. However, the penetration has been limited in South Asia. The reasons for this need to be better understood and require more research, which is beyond the scope of this report. Simpa piloted its operations in Karnataka and had plans to expand aggressively in relatively less-developed states such as Uttar Pradesh, Bihar, and Odisha. The customer profile and business environment in the less-developed states was different and brought new challenges. Perhaps expansion in these regions required a prior pilot and refinement of the business model before deployment at a higher scale to reduce the risks and improve the efficiency of the invested capital.

39. **Investing in leaner start-ups.** Start-up companies face high uncertainties and risks and probably require a lean organization to efficiently deploy the invested capital to achieve the required scale and profitability. Simpa's unit economics was positive and improved consistently during the investment period. However, the company needed to run a much leaner operation to reduce the losses.

40. **Diversifying risks in early-stage investment through investment in alternate products and business models within the subsegment.** Early-stage companies typically have a very high failure rate. Many venture capital firms follow a strategy of identifying specific sectors of investment and investing in multiple early-stage companies within the subsegment, which may have competing business models, to reduce the risk of losses and improve returns through diversification and sector specialization. For example, Greenlight Planet, a growth-stage company, disclosed recently that it has been profitable since 2016. It announced that it now operates the world's largest direct-to-consumer, pay-as-you-go solar product distribution business, with more than 2,400 company-managed sales agents in five countries. Greenlight's profitability is unique in the off-grid solar industry in which several companies have found readily available investment and growth but have struggled to demonstrate sustainability.<sup>5</sup>

## **B. Recommended Follow-Up Actions**

41. It is recommended that all investment proposals should include an appraisal of the value driver or the differentiating factor for the investee company as compared with the competition and alternative investment opportunities available for meeting the same goals. It is recommended that investment proposals should also include the amount of investment required in product or service development, sales and distribution development, or inventory financing along with a plan for deployment of such funds. It is recommended that key assumptions of the business and financial plan be laid out clearly and validated through independent means before approval of an investment or loan. It is recommended that for companies diversifying into new geographical areas or markets, geographical risks should be assessed in the investment proposal and

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<sup>5</sup> Matthew Kraft for Allison+Partners. 2017. Greenlight Planet Raises \$60 MM for Off-Grid Solar Financing Business, led by Apis Partners. *Business Wire*. 5 December. <https://www.businesswire.com/news/home/20171205005749/en/Greenlight-Planet-Raises-60-MM-Off-Grid-Solar>.

satisfactory performance of a small-scale pilot should be considered as a pre-condition for investment. It is recommended that investment in leaner start-ups should be considered with an approved upper limit for spending by investees on overheads relative to sales.

42. It is recommended that for equity investments, ADB should create a framework for more active involvement in the operations of the company.

43. It is recommended that for underperforming investments below a threshold of more than 25% lower than the targets, a fact-finding mission should be undertaken within 6 months of the first report of such underperformance to establish the cause, including industry-, region-, or company-specific factors.

44. Finally, it is recommended that a sector-specific framework be considered for investment in various sectors and investment should preferably be in multiple companies with alternate business models within the subsegment to diversify the risks associated with the high failure rate of early-stage companies. The framework should also differentiate between geographical areas because a successful solution in one market may not be suitable for others.

## PROJECT-RELATED DATA

Table A1.1: Investment Identification

1.	Country	India
2.	Project Number	46931-014 (equity) and 49238-001 (debt)
3.	Investment/ Loan Numbers	Investment number 7381 and Loan number 8298
4.	Type of Business	Manufacturing and sale of off-grid solar units
5.	Project Title	Off-Grid Pay-As-You-Go Solar Power Project (Equity) Off-Grid Prepaid Solar Leasing Project (Debt)
6.	Investee Company and/or Borrower	Simpa Networks Inc. (Investee) Simpa Energy India Private Limited (Borrower)
7.	Amount of Approved ADB Assistance	Equity of \$2 million and Debt of \$6 million

ADB = Asian Development Bank.

Sources: ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Equity Investment in Simpa Networks Inc. for the Off-Grid Pay-As-You-Go Solar Power Project in India*. Manila; and ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Administration of Loan to Simpa Energy India Private Limited for the Off-Grid Prepaid Solar Leasing Project*. Manila.

Table A1.2: Investment Data

1.	Concept Clearance Approval	12 Nov 2012 (Equity); 9 Sep 2015 (Debt)
2.	Date of Board Approval	15 Jan 2013 (Equity); 1 Dec 2015 (Debt)
3.	Signing Date of Legal Agreements	20 Mar 2013 (Equity); 5 Feb 2016 (Debt)
4.	Equity Investment and Disbursement Date	\$2 million on 20 March 2013
5.	Loan Amount and Date of Initial Disbursement	\$6 million (\$1.5 million drawn on 10 March 2016 in the first and only disbursement)

Source: Asian Development Bank.

Table A1.3: Summary of Project Cost and Funding Sources—Equity

Project Cost	RRP Amount (\$ million)	Actual Amount <sup>a</sup> (\$ million)	Share of Total (%)
<b>Total Project Cost</b>	<b>6.3</b>	...	100%
<b>Sources of Funds</b>			
<b>Equity</b>	<b>6.3</b>	...	<b>100%</b>

RRP = report and recommendation of the President.

<sup>a</sup> The investment was part of a \$6.3 million expansion plan for achieving sales as per the business plan. Actual sales achieved were lower than estimates with multiple financing rounds in between.

Source: ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Equity Investment in Simpa Networks Inc. for the Off-Grid Pay-As-You-Go Solar Power Project in India*. Manila.

Table A1.4: Summary of Project Cost and Funding Sources—Debt

Total Project Cost	RRP Amount (\$ million)	Actual Amount <sup>a</sup> (\$ million)	Share of Total (%)
<b>Total Project Cost</b>	<b>24</b>	...	100%
<b>Sources of Funds</b>			
<b>Equity</b>	<b>13.5</b>	...	<b>56.5%</b>
<b>Debt</b>	<b>10.5</b>	...	<b>43.5%</b>

RRP = report and recommendation of the President.

<sup>a</sup> The investment was part of a \$24 million expansion plan for achieving sales as per the business plan. Actual sales achieved were lower than estimates with multiple financing rounds in between.

Source: ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Administration of Loan to Simpa Energy India Private Limited for the Off-Grid Prepaid Solar Leasing Project*. Manila.

## RESULTS AND RATINGS FOR PROJECT CONTRIBUTIONS TO PRIVATE SECTOR DEVELOPMENT AND ADB STRATEGIC DEVELOPMENT OBJECTIVES—INFRASTRUCTURE

Results area	Actual achievements	Remarks	Potential future achievements	Risk
<b>1. Within company PSD effects</b>				
1.1 <b>Improved skills.</b> New or strengthened strategic, managerial, operational, technical, or financial skills.	The project has enhanced skills of management and sales channel in reaching out to the customers in underserved rural areas and serving unmet needs of energy access.	Even though the sales targets were not entirely met, new skills were added nevertheless.	Renewed growth in the company by altering the business model adding further skills.	Discontinued operations, failure to tie up adequate investment.
1.2 <b>Improved business operations.</b> Improved ways to operate the business and compete, as seen in investee operational performance against relevant best industry benchmarks or standards.	The investee company tried to scale up operations and achieve profitability in an innovative business. It could not achieve the desired results. Since this was an innovative business model in the region, comparable companies are very few. It has been noted from public information that Greenlight Planet, a company in the same segment, has been able to achieve profitability and scale.	The investee operational performance has been lower than expected with neither scale nor profitability achieved. The operational performance is lower than industry benchmarks.	The assessment can change if Simpa can further innovate to achieve scale and profitability since the company is revising its business and financial plan.	Discontinued operations, failure to tie up adequate investment.
1.3 <b>Improved governance.</b> As evident in set standards related to corporate governance, stakeholder relations, EHS fields, and/or energy conservation, and their implementation.	The governance standards within the company have been adequate, however, there have been some instances of disputes with terminated employees. The company has been publishing audited financials with reputed auditors.	The control of overheads has been an area of concern.	Leaner operations after restructuring.	Continued under-performance.
1.4 <b>Innovation.</b> New or improved infrastructure design, technology, and service delivery; ways to cover or contain costs, manage demand or optimize utilization; improved risk allocation between private companies and government; financial structure, etc.	The company has tried to implement new ways for underserved customers to access energy. The solution was based on an innovative PAYGO business model for accessing off-grid solar energy with a mobile platform and cloud-based recharge and top-up. Desired scale and profitability could not be achieved. However, the company has nevertheless served a significant customer base with the innovative product.	The company has served a significant number of customers via its innovative business model. However, it could not achieve the desired scale and profitability.	The assessment can change if Simpa can further innovate to achieve scale and profitability since the company is revising its business and financial plan.	Discontinued operations, failure to tie up adequate investment.

<b>Results area</b>	<b>Actual achievements</b>	<b>Remarks</b>	<b>Potential future achievements</b>	<b>Risk</b>
<b>1.5 Catalytic element.</b> Mobilizing or inducing more local or foreign market financing or foreign direct investment in the company.	The company attracted equity and debt investments from both foreign investors and local institutions. The investments have underperformed and did not generate the desired returns.	Simpa could not demonstrate financial and economic viability.	Renewed growth in the company could be achieved by altering the business model.	Discontinued operations, failure to tie up adequate investment
<b>2. Beyond company PSD effects</b>				
<b>2.1 Private sector expansion.</b> Contribution by a pioneering or low-profile project that facilitates in its own right, or paves the way for, more private participation in the sector and economy at large.	At the time of ADB's investment, the company was a very early-stage venture. The company has been operational for 9 years and served a significant customer base.	Successful achievement of desired scale and profitability could have had a wider expansion effect on the sector and economy at large.	The assessment can change if Simpa can further innovate to achieve scale and profitability since the company is revising its business and financial plan.	Discontinued operations, failure to tie up adequate investment
<b>2.2 Competition.</b> Contribution of new competition pressure on public and other sector players to raise efficiency and improve access and service levels in the industry.	No significant achievement because the overall scale of operations is too small to affect the sector and other players.	Successful achievement of desired scale and profitability could have had a wider significant effect.		Discontinued operations, failure to tie up adequate investment
<b>2.3 Demonstration effects.</b> Adoption of new skills, improved infrastructure assets and services, more efficient processes, maintenance regimes, improved standards, risk allocation and mitigation beyond the project company.	The company had potential for substantial demonstration effects with inclusive energy access based on simple and affordable solar energy products and an innovative PAYGO financing model.	Demonstration effects could not be achieved since the company could not attain the desired scale and financial viability.		Discontinued operations, failure to tie up adequate investment
<b>2.4 Linkages.</b> Relative to investments, the project contributes notable upstream or downstream linkage effects to business clients, consumers, suppliers, key industries, etc., in support of growth.	The company has streamlined its supply chain with forward and backward linkages. It has set up local contract assembly arrangements and its own distribution channels. Thus, the impact on the local economy has been positive, but less than satisfactory because of underachievement on scale of operations and profitability.	Successful achievement of desired scale and profitability could have had a wider significant effect.		Discontinued operations, failure to tie up adequate investment
<b>2.5 Catalytic element.</b> Mobilizing or inducing more local or foreign market financing or	Limited or negative beyond company effects because of underperformance of attracted investments.	The failed investments could not serve to	...	Discontinued operations, failure

<b>Results area</b>	<b>Actual achievements</b>	<b>Remarks</b>	<b>Potential future achievements</b>	<b>Risk</b>
foreign direct investment in the sector (beyond the company) through pioneering or catalytic finance.		catalyze beyond company investment.		to tie up adequate investment
<b>2.6. Affected laws, frameworks, regulation.</b> Contributes to improved laws and sector regulation for PPPs, concessions, joint ventures, and build–operate–transfer projects; and liberalizing markets as applicable for improved sector efficiency.				
<b>3. Contribution to other ADB strategic objectives</b>				
<b>3.1 Sector development (outputs).</b> Contribution to other sector development outputs and outcomes not captured under point 2., such as capacity or network expansion.	Not significant because the scale of operations is not sufficient to affect sector-level outputs.	Desired scale could not be achieved.	Uncertain since the new business plan is yet to be finalized	
<b>3.2 Sector development (outcomes).</b> Contribution to other sector development outputs and outcomes not captured under point 2., such as increased infrastructure utilization or consumption, improved in-country connectivity, and improved energy security.	Not significant because the scale of operations is not sufficient to affect sector-level outcomes.	Desired scale could not be achieved.	Uncertain since the new business plan is yet to be finalized	
<b>3.3 Inclusion.</b> Improved access to availability or affordability of infrastructure services for the poor and other disadvantaged groups.	The company has improved access to energy in the areas that it has served. However, operations have not scaled up significantly.	Desired scale could not be achieved.	The assessment can change if Simpa can further innovate to achieve scale and profitability since the company is revising its	No additional and significant risk going forward.

Results area	Actual achievements	Remarks	Potential future achievements	Risk
			business and financial plan.	
<b>3.4 Job creation.</b> Creation of additional sustainable jobs or self-employment. Distinguish between jobs created within and beyond the company.	The company has created additional jobs within by setting up its own sales, distribution, and servicing channels.	Desired scale could not be achieved, however, impact on job creation has been positive and incremental.	Uncertain since the new business plan is yet to be finalized	A significant scale down of operations or change in business model to cut costs can be a downside risk.
<b>3.5 Environmental sustainability.</b> Project net impact on GHG emissions. Any other contributions to environmental improvements.	The company has reduced GHG emissions by about 16,000 tons in FY2019 (as per company reports).	Achievement is significantly lower than expected levels.	The assessment can change if Simpa can further innovate to achieve scale and profitability since the company is revising its business and financial plan.	No additional and significant risk going forward.
<b>3.6 Regional integration.</b> Project contributions to regional cooperation and integration by facilitating trade, cross-border mobility, cross-border power supplies, etc.	The company has been procuring photovoltaic panels through imported sources while assembly and integration with the technology platform has been done locally.	Achieved scale is lower than expected, however, the impact has been incremental and positive.		No additional and significant risk going forward.
<b>4. Overall Rating<sup>b</sup></b>				

ADB = Asian Development Bank, EHS = environmental, health, and safety; GHG = greenhouse gas; PAYGO = pay-as-you-go; PPP = public-private partnership, PSD = private sector development.

## SECTOR REVIEW

1. Though still robust, growth in developing Asia continues to moderate in 2019 as domestic investment weakens under a more challenging external environment with slowing global trade and economic activity, protracted trade tensions between the People's Republic of China and the United States, and a global downturn in electronics.<sup>1</sup> The growth of India's economy slowed to 5.1% in 2019 as compared to 6.1% in 2018. In 2020, impact of coronavirus disease (COVID-19) has led to a significant downward revision of outlook with negative growth expected in most economies. The International Monetary Fund, in its October 2020 edition of World Economic Outlook, stated that it expects India's economy to contract by 10.3% in FY2021 which is further lower than Reserve Bank of India's forecast of 9.5% contraction mainly due to the COVID-19 pandemic and related economic disruptions. However, a sharp recovery is also expected in FY2022 with 8%–9% growth forecast given for India by various agencies. Key economic indicators are given in Table A3.1 below.

**Table A3.1: Key Economic Indicators for India**

Year	GDP Growth (%)	CPI Inflation (%)	Trade Deficit (\$ billion)	External Debt (\$ billion)	Fx Reserves (\$ billion)	Period End Exchange Rate (₹:\$)
<b>FY2020</b>	4.2%	4.8%	161	559	478	75.4
<b>FY2019</b>	6.1%	3.4%	184	543	412	69.4
<b>FY2018</b>	7.0%	3.6%	162	529	425	65.1

CPI = consumer price index, Fx = foreign exchange, FY = fiscal year, GDP = gross domestic product.

Source: Reserve Bank of India. 2020. *Handbook of Statistics on Indian Economy*. Mumbai.

India has been aggressively pursuing the target of grid connected electricity access for all. Universal household electricity access was a central political commitment in India's 2014 national elections and the government placed a high priority on following through. In April 2018, the Prime Minister of India announced that the country had achieved the target. While independent estimates place the figure at about 85%, the World Bank noted in May 2018 that India is progressing well and is on its way for achieving full access in the early 2020s.<sup>2</sup> This has contributed to shrinking demand for off-grid energy access products.

2. A number of modern solar lighting technologies have emerged globally. In spite of this, the market penetration of solar lights in India is low at 5%–8%.<sup>3</sup> As of December 2019, 8.5 million off-grid solar lighting products have been sold globally in 2019 (13% increase over 2018).<sup>4</sup> The majority of these sales (about 3 million or 68%) have been in the African region while 2 million units (about 24%) have been sold in South Asia.

3. With respect to the product mix, the majority of units sold are solar lanterns, which are small and portable. Solar home systems (SHSs), which refer to units with an 11-plus watt peak,<sup>5</sup>

<sup>1</sup> Asian Development Bank. 2019. *Asian Development Outlook Supplement*. Manila.

<sup>2</sup> L. Jha. 2018. India Doing Extremely Well on Electrification: World Bank. *Livemint*. 4 May.

<https://www.livemint.com/Politics/zQy9vumGt5yQAoG7LT2W3L/India-doing-extremely-well-on-electrification-says-World-Ba.html>

<sup>3</sup> Lighting Global. India. <https://www.lightingglobal.org/where-we-work/lighting-asia/india/>.

<sup>4</sup> Global Off-Grid Lighting Association. 2019. Global Off-Grid Solar Market Report: Semi-Annual Sales and Impact Data. July–December.

<sup>5</sup> A watt peak is the unit of maximum electrical output of a PV system measured under standard test conditions.

comprise about 20% of global units sold in 2019. However, they contribute more than 90% of the megawatt capacity sold during the year, adding about 79-megawatt SHS capacity globally in 2019. A majority (about 65%) of SHSs are sold under pay-as-you-go sales because they are larger units with higher price points.

4. The growth in the global solar lighting market and SHSs has been driven by growth in African regions while the South Asian market led by India has been seeing a decline in sales volumes in 2018 and 2019. The units sold in South Asia in the second half of 2019 have been 56% of the sales volume achieved in the first half of 2018, according to the Global Off-Grid Lighting Association report for July–December 2019 (footnote 4). The increase in electrification, reduction in funds availability as a result of a liquidity crunch faced by non-banking financial companies and microfinance institutions, and the discontinuation of government procurement of off-grid products have been the key reasons for sales decline in Indian market.

5. Even within the South Asia market, India is among the most electrified countries and the electrification rate has been growing consistently (Table A3.2). Hence, it is questionable whether India can be a target market for off-grid products as a means of basic energy access for the underserved since on the one hand, electrification rates have been growing consistently, but on the other hand, at least some of the lack of access could be because of affordability, on which off-grid compares poorly to grid-connected access. The evolution of off-grid energy as a choice for affluent customers and commercial establishments in urban areas needs to be seen, as the grid energy cost may be comparable to the off-grid cost for some customers and some may be willing to pay a premium for cleaner energy.

**Table A3.2: Electrification in India, 2007–2018**

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>% population electrified</b>	72%	75%	76%	68%	80%	81%	84%	88%	90%	93%	95%

Source: World Bank Database. <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=IN> (accessed 21 September 2020).

## GENDER ACTION PLAN—IMPLEMENTATION AND ACHIEVEMENTS

Output	Activities, Indicators, and Targets	Results and Status																																		
Sustainable solar systems for houses and microenterprises installed—increase access of women to electricity and promote participation of women across Simpa’s operations, promote employment and economic opportunities to women, organize outreach and marketing activities that encourage participation of women	Monitor the number of women (in presently under-electrified households) benefiting from the installation of 105,000 new solar home systems.	<b>Implemented.</b> Simpa monitored the number of women beneficiaries from the 62,334 newly installed solar home systems from 2015 to 2019 and started the updating of data on women in 2016. The number of women beneficiaries has increased by 8.6 times, from 264 in 2016 to 2,275 in 2019.																																		
	Launch a series of marketing initiatives targeted at empowering 25,000 women beneficiaries (from 5,100 in 2015) as decision makers within the households through the referral coupons initiative (worth ₹200, which is equivalent to 10 days of energy charge)	<b>Not achieved.</b> In 2016, Simpa discontinued its referral coupons scheme and did not track the number of women beneficiaries.																																		
	Prioritize and monitor the number of women in villages engaged as solar entrepreneurs within the social and operating constraints of the areas in which Simpa operates.	<b>Implemented.</b> Simpa started tracking village-level solar entrepreneurs by gender in 2018 and reported that there are 167 women village-level solar entrepreneurs. The number increased by 2.2 times in 2019 to 373 women entrepreneurs.																																		
	Prioritize and monitor the number of women staff employed	<b>Implemented.</b> Simpa started monitoring the number of its staff by gender in 2016. The data below shows a wide disparity in the distribution of staff by gender, with an average of 97.8% men and 2.2% women among its staff from 2016 to 2019.																																		
		<b>Details on the Number of Simpa Staff, 2016–2019</b> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">Year</th> <th colspan="4">Number of Simpa Staff</th> <th rowspan="2">Total</th> </tr> <tr> <th>Male</th> <th>%</th> <th>Female</th> <th>%</th> </tr> </thead> <tbody> <tr> <td>2016</td> <td>294</td> <td>97.7</td> <td>7</td> <td>2.3</td> <td>301</td> </tr> <tr> <td>2017</td> <td>406</td> <td>97.4</td> <td>11</td> <td>2.6</td> <td>417</td> </tr> <tr> <td>2018</td> <td>703</td> <td>98.0</td> <td>14</td> <td>2.0</td> <td>717</td> </tr> <tr> <td>2019</td> <td>573</td> <td>97.9</td> <td>12</td> <td>2.1</td> <td>585</td> </tr> </tbody> </table>	Year	Number of Simpa Staff				Total	Male	%	Female	%	2016	294	97.7	7	2.3	301	2017	406	97.4	11	2.6	417	2018	703	98.0	14	2.0	717	2019	573	97.9	12	2.1	585
Year	Number of Simpa Staff				Total																															
	Male	%	Female	%																																
2016	294	97.7	7	2.3	301																															
2017	406	97.4	11	2.6	417																															
2018	703	98.0	14	2.0	717																															
2019	573	97.9	12	2.1	585																															
	Community engagement program designed and organized for women annually per branch	<b>Not implemented.</b> Simpa did not track the participation by gender in programs they organized																																		
	Document 10 testimonials (two per state) on how Simpa operations have changed the lives of women, highlighting the benefits of access to electricity	<b>Not implemented.</b> Simpa has neither documented any testimonials on how its operations have changed the lives of women by providing access to electricity nor reported any testimonials according to gender.																																		

Source: Simpa Energy India Private Limited, 2020.

## PROJECT OUTPUTS AND OUTCOMES—ACTUAL ACHIEVEMENTS

**Table A7.1: Achievements versus Targets—Under Debt Investment in 2015**

Outcome	Targets	Actual achievement
Access to clean energy, enabled by a financially viable energy services company, increased	225,000 households provided access to electricity by 2018 (2014 baseline: 5,475)	The company had provided access to about 57,000 households through SHS units sold by March 2019. Numbers have been estimated from the compilation of DEMRs and ADB monitoring reports.
	Installed generation capacity is 44.4 MW equivalent by 2018 (Baseline: 2.8 MW equivalent)	Given the product portfolio comprises 50–100 W panels, installed capacity is estimated at under 10 MW. The company has been submitting the data through DEMRs but because of the inconsistency in units and errors, estimation through SHS units has been done.
	77,108 tons of CO <sub>2</sub> emissions avoided annually since 2018	As per company submissions, 16,000 tons of emissions have been avoided cumulatively up to March 2019.
Outputs	Targets	Actual achievement
Sustainable solar systems for houses and microenterprises installed	105,000 solar home systems sold and installed by 2016 (2014 baseline: 5,745)	About 30,000 solar home systems were installed by March 2017. Numbers have been estimated from the compilation of DEMRs and ADB monitoring reports.
	103.3 GWh produced from clean energy by 2017 (Baseline: 2.4 GWh in 2014)	An estimated 9 GWh has been generated from clean energy by March 2018 as per company submissions.
	25,000 women customers benefited from marketing strategy through referral coupons (worth ₹200, which is equivalent to 10 days of energy charge) (Baseline: 5,100 in 2015)	The referral program was discontinued in October 2015 because it was being used more as a discounting tool rather than a sales driver. The company has recently launched a special discount for down payments by women, however, the data on the impact and reach of the new program is not available.
	Locally purchased goods and services total ₹1.6 billion by 2016 (Baseline: ₹208.5 million in 2014)	About ₹0.3 billion in locally procured goods and services by March 2017. Data has been estimated from company submissions during FY2015–FY2017.
	10 testimonials documented (two per state) on how Simpa operations have changed the lives of women, highlighting the benefits of access to electricity	Testimonials of two women from Odisha were available and were positive. The company's operations are in three states only.

ADB = Asian Development Bank, CO<sub>2</sub> = carbon dioxide, DEMR = development effectiveness monitoring report, GWh = gigawatt-hour, MW = megawatt, W = watt.

Source: Asian Development Bank estimates based on information shared by Simpa Energy India Pvt Ltd.

**Table A7.2: Achievements versus Targets—Under Equity Investment in 2013**

<b>Outcome</b>	<b>Targets</b>	<b>Actual achievement</b>
Increased access to clean energy by a financially viable payment systems company	63,125 new households provided access to electricity by 2015 (read as 2014 end as per the business plan)	The company had provided access to about 9,000 households by March 2015 and 26,000 households by March 2016 through solar home systems. The micro-grid B2B segment was discontinued with negligible contribution to the targets.
	Average of 2,900 tons of CO <sub>2</sub> emissions avoided per annum (2012 to 2022)	Average emissions avoided per annum were at 199 tons as of March 2016, according to the August 2016 ADB monitoring report. The annual average improved later with company submissions indicating 16,000 tons were avoided by March 2019, which would mean an annual average of 2,667 tons. However, the reported data may be erroneous because of cumulative reporting in periodic reports. The company website states that 6,900 tons of emissions have been avoided cumulatively.
	Return on equity (nominal) exceeds 20%	Return on equity is negative because the operations continue to be loss making.
<b>Outputs</b>	<b>Targets</b>	<b>Actual achievement</b>
Installation of sustainable solar home systems, installation of metering systems for solar powered micro grids	29,000 new solar home systems sold and installed by 2014	The company had sold new solar home systems to an estimated 9,000 households by March 2015.
	34,125 metering units sold and installed by 2014	The micro-grid B2B segment was discontinued with negligible contribution to the targets.
	Locally purchased goods and services total ₹110 million by 2014	The company had locally procured goods and services worth ₹265 million in FY2015, which includes all costs incurred in India. Local expenses external to the company are estimated at about ₹164 million in FY2014 and FY2015 from FY2015 audited financials as purchases plus overheads less imports.

ADB = Asian Development Bank, B2B = business-to-business, CO<sub>2</sub> = carbon dioxide, FY = fiscal year.  
Source: Asian Development Bank estimates based on information shared by Simpa Energy India Pvt Ltd.