

## Alleviation of energy poverty

### Anticipated transaction impact

Provision of sustainable energy access to rural agro-entrepreneurs that will support income-generating activities

**Impact score** Pass (19/21)  
**Credit score** Pass (17/21)

### Loan Overview

Commitment limit	USD 75,000
Tenor and structure	3 months grace period, 36 monthly payments
Interest rate	7.75%
Collateral	None
Guaranty	None

### Financial Overview

2021E Revenue	USD 5.30M
2021 Maturing loans	USD 0.35M
Net assets as of Dec 2020	USD 1.6M

### Company Information

Legal name	ERES Energía Renovable, S.A.P.I. De C.V.
Incorporation date	9 October 2009
Corporate address	Mexico City, Mexico
Nature of business	Sustainable energy
Website	www.ilumexico.mx

### Shareholders

Name	Domicile	Share (%)
Manuel Wiechers Banuet	Mexico	37%
Other co-founders	Mexico	26%
Engie RDE	France	20%
Iberdrola – Perseo	Spain	9%
Ana Lucia Coll Guzman	Mexico	8%

### Company management

Name	Nationality	Position
Manuel Wiechers Banuet	Mexican	CEO
Ana Lucia Coll Guzman	Mexican	Chief of staff
Mariel Ramirez Alfaro	Mexican	COO
Luis Ruben Rodas Martinez	Mexican	CFO

### Recommendation

Approval of a USD 75,000 term loan given the company's positive impact rating and satisfactory credit standing.

Note: FX rate assumed at 1 USD: 20 MXN

## Illuméxico

### Business overview

Illuméxico designs, builds, and installs solar home systems to provide electricity to remote communities in Mexico. According to the 2020 census by the National Institute of Statistics and Geography, more than 270,000 homes in Mexico still do not have access to electricity. These families rely on candles, diesel, and other sources of light which are costly, hazardous to health, and detrimental to the environment.

Through the installation of an environment-friendly and affordable solar energy system, Illuméxico provides electricity to people in these rural communities. The solar energy systems range from small units that can power two LED bulbs to bigger systems that can power a school or a water pumping station. Illuméxico also manages last-mile distribution networks that provide customer service through rural officers and branches across the country. Illuméxico has also rolled out the Pay As You Go (PAYGO) system that offers a flexible payment system to ensure affordability for all customers.

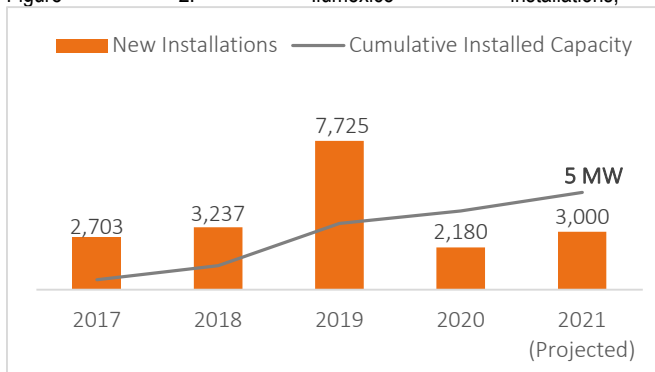
Illuméxico derives revenues from three sales channels:

Figure 1: Illuméxico sales channels

<b>B2C</b>	Direct marketing to rural customers	Pay As You Go (PAYGO) sales model for 1M+ families in the region who can afford a \$18 recurring monthly service fee
<b>B2G</b>	Energy access policies for poor communities	Public programs aiming to subsidize 1M installations of off-grid solar by 2030
<b>B2B</b>	CSR investment	Corporate giving programs aiming to provide energy access to poor communities

To date, Illuméxico has installed more than 4 MW capacity, which translates to over 2,000 communities with access to an affordable, sustainable, and eco-friendly energy source. Its customers and beneficiaries include households, micro businesses, and community institutions such as schools and clinics.

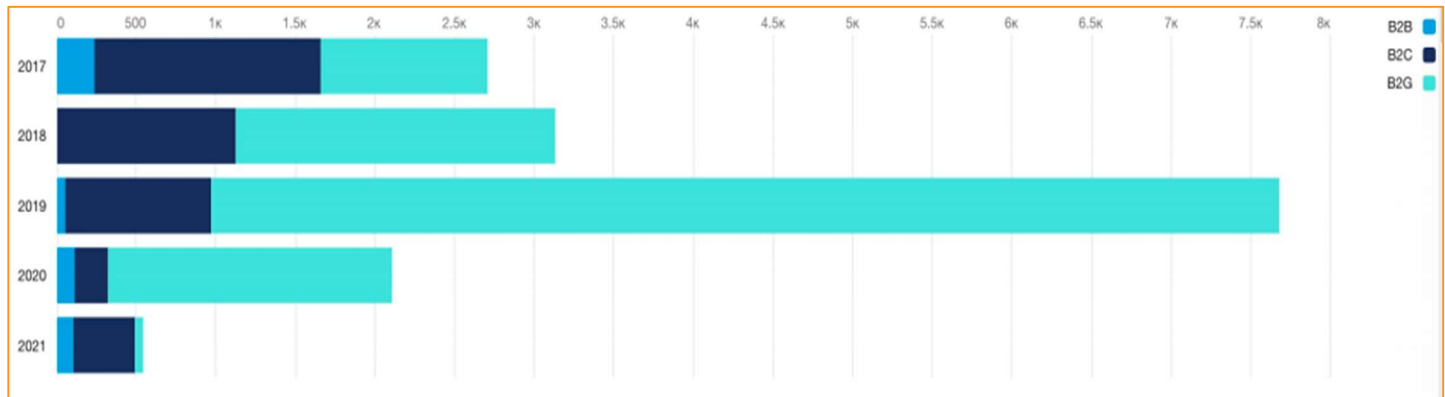
Figure 2: Illuméxico installations, 2017-2021E



Illuméxico has generated a positive EBITDA since 2017. The Company has consistently notched more than \$3M in sales for each of the past four years and had an unusually big year in 2019 when it brought in more than \$11M – most of it due to one-time government contracts.

Recognizing that government contracts may not be sufficient to sustain profitability, Illuméxico aims to expand its B2C business, with a target to reach 7,500 new customers in 2021. A large majority of these customers are using energy for agro-related activities such as preservation of produce through refrigeration (for farmers, fishermen, and livestock owners) and irrigation through water pumps. Illuméxico sees an opportunity to provide solar installations that will not just improve people's quality of life, but will also increase their incomes and reduce waste.

Figure 3: Illuméxico new customers by channel, 2017-2021E



Source: Illuméxico Deck

### Transaction overview

In Puerto Chale, 35% of the residents, or 40 households, lack electricity. The entire town relies on fishing for income and, according to a Mexican government census, only 5 homes have refrigerators. Everyone else keeps their catch fresh with ice which is purchased from the nearest town. This is very costly for the fishermen and ice is not always available. Oftentimes, fish, shrimp and clams that are caught in Puerto Chale never make it to market which keeps fishermen poor while also damaging fisheries.

Beneficial Returns is considering extending a USD 75,000, three-year term loan to Illuméxico. Loan proceeds will be used to fund at least 40 solar systems that will power refrigeration equipment for local fishermen in the village of Puerto Chale in Baja California Sur. At least 22 systems will be installed later this month and the remaining units are expected to be in place by August 2021.

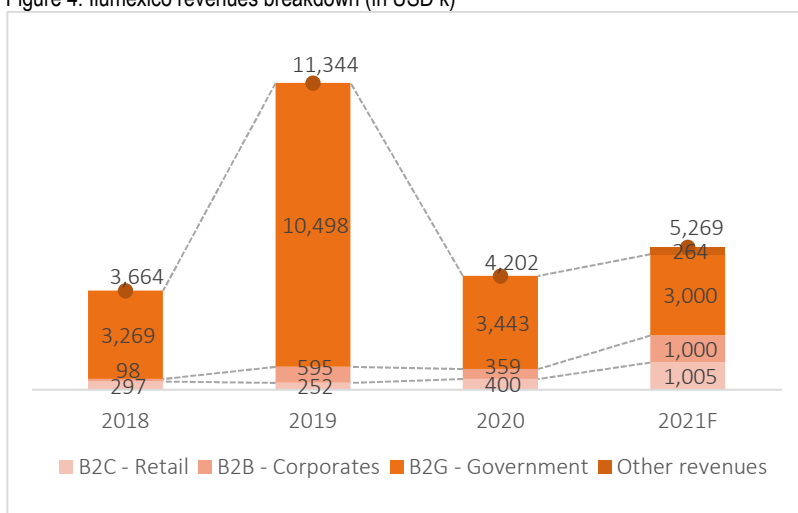
Each solar unit approximately costs USD 950 (exclusive of USD 200-300 installation cost). Upon entering a permanent contract with Illuméxico, the customer pays an upfront deposit of USD 250 and recurring fee of USD 32/month. Customer payments are made through a variety of channels including deposit via mobile money kiosk, payment via Telecom Telegrafos, or cash deposit to a local bank. Illuméxico uses Angaza's PAYGO technology that allows it to remotely monitor and lock electricity service whenever a customer's payment is not up-to-date.

### Rationale to lend

- By introducing solar energy systems to remote rural and indigenous Mexican communities, Illuméxico saves customers money and enhances productivity of the families it serves. As such, Illuméxico directly helps reduce poverty. Illuméxico is also able to address critical environmental issues through reduced carbon emissions from polluting sources of light. We assess Illuméxico's impact to be high with a score of 19 out of 21. (See Appendix 1: *Illuméxico Impact Assessment*)

- Multiple studies conducted have underscored the importance of energy access to poverty reduction. As of June 2021, Illuméxico has already provided electricity to over 111,000 individuals from 2,207 rural communities in Mexico. These families are located in areas too remote to warrant a grid connection and had long suffered the adverse effects of limited energy access.
- According to Illuméxico's estimate, access to a sustainable source of power results to savings of 15%-18% of household income. Further, this has enabled communities to improve their quality of living, reduce their exposure to hazardous energy sources, and increase their productivity with more hours spent in academic and income-generating activities.
- With the goal to expand their impact to rural communities, Illuméxico now aims to tap more agro-entrepreneurs. The solar energy systems will provide the refrigeration and freezing needed to preserve their produce, such as milk, fish, meat, etc.. For a monthly fee of USD 32, current monthly sales can potentially increase given a better cold chain.
- Illuméxico also provides last mile customer care through offices and depots which are operated and managed by trained locals. Illuméxico engages and trains the communities in which it operates through programs about financial inclusion and youth education, environmental awareness, and community organization.
- Environmental outcomes are also improved as carbon emissions from polluting sources of light are replaced by the eco-friendlier solar energy systems. To date, Illuméxico has displaced 22,772 tons of CO<sub>2</sub>.
- We assess Illuméxico's credit standing to be adequate with a score of 17 out of 21 given our analysis of their financial standing (*See Appendix 2: Illuméxico Credit Assessment*).
  - In 2019, Illumexico recorded a surge in revenue and overall financial performance due to very large, one-time government contracts, but the enterprise has demonstrated a history of positive EBITDA with far more modest revenues.
  - Current Illuméxico investors Engie and Iberdrola have committed a total of \$900k in equity provided that Illumexico can secure a lead investor for a \$5M equity raise.
  - Contracts with the Mexican government which were won and fulfilled as part of the Universal Electric Service Fund (Fondo de Servicio Universal Electrico, FSUE) fueled the company's profitability since 2018. Sales from the B2G segment account for majority of revenues with notable improvement in sales from the B2C segment.
  - Moving forward, Illuméxico's growth is anticipated to be derived from the B2C segment as they tap more families that can afford monthly service fees. The initial phase of this growth will be targeted towards agro-entrepreneurs in Baja California Sur and Quintana Roo. Families with existing solar models installed by a third party will also be tapped by Illuméxico for continued servicing. The B2B and B2G segments will continue to be critical factors to support profitability and revenues from the B2G channel will be highly dependent on the government's initiatives for solar energy. Several contracts have already been signed for 2021 and there is a good line-up of prospects for upcoming bids and other projects. We believe that Illuméxico stands a good chance of winning these projects should these projects push through. Overall, Illuméxico aims to expand customer base through different channels and tap 7,500 more families in 2021.

Figure 4: Illuméxico revenues breakdown (in USD k)



- For 2021, higher expenses will be attributable to the roll-out of the PAYGO program to more customers. One-time severance costs for terminated employees also increased expenses in the first quarter of 2021. Nevertheless, profitability is expected to improve in the remaining quarters given the execution of projects and expansion of the B2C segment. This, together with cost efficiency measures being implemented to reduce operating expenses, should sustain Illuméxico's positive EBITDA.

Figure 4: Illuméxico income statement 2015-2021E

in USD k	2015	2016	2017	2018	2019	2020	2021E
Revenue	515	966	2,107	3,664	11,344	4,202	5,269
Cost of sales	-160	-322	-1,064	-1,858	-6,852	-2,336	-2,910
Gross profit	355	644	1,043	1,806	4,493	1,866	2,360
Operating expenses	-449	-644	-908	-1,608	-2,247	-1,636	-2,088
<b>EBITDA</b>	<b>-94</b>	<b>-1</b>	<b>135</b>	<b>198</b>	<b>2,245</b>	<b>230</b>	<b>272</b>
<b>Financial Performance Metrics</b>							
Annual revenue growth rate		88%	118%	74%	210%	-63%	25%
Gross profit margin	69%	67%	50%	49%	40%	44%	45%
EBITDA margin	-18%	0%	6%	5%	20%	5%	5%

Source: Illuméxico historical financials and 2021 budget

- Notable build-up of year-end receivables in 2020 was accounted for by FSUE contracts which are expected to be fully paid in July 2021. Despite this, Illuméxico maintained a positive ending cash balance and debt service requirements were adequately covered. Leverage position remained acceptable with a D/E ratio of 0.80x.

Figure 5: Illuméxico balance sheet 2015-2020

in USD k	2015	2016	2017	2018	2019	2020
<b>Assets</b>						
Cash	45	38	564	198	242	246
Accounts receivable	107	170	556	376	476	2,075
Inventory	93	106	511	2,940	2,768	364
Other current assets	-	-	25	134	45	67
Current assets	244	314	1,656	3,648	3,531	2,752
Non-current assets	14	38	100	119	203	212
<b>Total Assets</b>	<b>258</b>	<b>352</b>	<b>1,756</b>	<b>3,767</b>	<b>3,734</b>	<b>2,965</b>
<b>Liabilities and shareholders' equity</b>						
Current liabilities	64	215	754	2,440	988	1,171
Non-current liabilities	9	27	169	434	199	149
Total liabilities	73	241	922	2,874	1,188	1,320
Shareholder's capital	186	110	834	892	2,547	1,645
<b>Total liabilities and shareholders' equity</b>	<b>258</b>	<b>352</b>	<b>1,756</b>	<b>3,767</b>	<b>3,734</b>	<b>2,965</b>
<b>Financial Position Metrics</b>						
Current ratio (x)	3.82	1.46	2.20	1.49	3.57	2.35
D/E ratio (x)	0.39	2.18	1.11	3.22	0.47	0.80

Source: Illuméxico historical financial statements

- Illuméxico is forecasted to comfortably service its debt requirements and strengthen its cash position given the following key assumptions:
  - o 7,500 additional recurring customers across all sales channels
  - o Overall payment rate of at least 80%
  - o FSUE payments will be received within the year
  - o Additional financing amounting to USD 44M will be achieved

Figure 5: Illuméxico 2021 cash flow projections

In USD k	Q1	Q2	Q3	Q4	2021
Cash, initial balance	275	749	24	(420)	275
Total income	2,327	533	1,550	2,058	6,469
COGS	(583)	(2,262)	(1,100)	(54)	(3,999)
Operating expenses	(690)	(534)	(601)	(542)	(2,367)
Investments (such as R&D, innovation, and other investment expenses)	(44)	(70)	(55)	(33)	(203)
Financial income (expenses)	(536)	1,608	(239)	(664)	170
<b>Net cash flow</b>	<b>474</b>	<b>(725)</b>	<b>(444)</b>	<b>765</b>	<b>70</b>
<b>Cash, ending balance</b>	<b>749</b>	<b>24</b>	<b>(420)</b>	<b>345</b>	<b>345</b>

Source: Illuméxico 2021 budget

- We note that tapping more customers from the B2C segment with good credit ratings is crucial to sustain Illuméxico's profitability and debt service capacity. Based on our sensitivity analysis, payment rate of the B2C segment can be tempered to 57% without affecting Illuméxico's debt service capacity.

- We also recognize that the B2B and B2G segments will continue to account for a significant portion of revenues. Our break-even analysis indicates that B2G and B2B revenues can decline by up to 13% from forecasted level and Illuméxico's can still cover debt obligations and maintain a stable cash level.

Figure 6: Break-even scenarios

Parameter	Base projections (Illuméxico's forecast)	Break-even	Margin of safety
Payment rate	80%	57%	29%
New B2B/B2G customers	2,000	1,737	13%

Note: Each parameter scenario is independent

- In August 2017, Beneficial Returns extended a \$50,000 loan to Illuméxico that financed 15 solar refrigerators to support the livelihoods of women owning off-grid grocery stores. Illuméxico has made 42 of 42 loan payments and this stellar payment record makes us comfortable extending this new loan.

### Major risks and mitigating factors

Risk	Risk factor	Probability	Risk mitigating factor
Illuméxico unable to sustain positive earnings	Failure to achieve growth in the B2C segment	Moderate	<ul style="list-style-type: none"> <li>▪ Aggressive strategies are being implemented to acquire more customers such as conducting open market sales to identified potential clients and re-activating customers.</li> <li>▪ Illuméxico already started offering solar installations to households engaged in agro-related activities. Positive response was noted from the communities as residents already signed up and filed a request for solar systems.</li> <li>▪ Illuméxico also aims to expand geographical reach. It has already started operations in Colombia and may enter Peru and Panama.</li> </ul>
	Failure to secure contracts for the B2B and B2G sales channels	Moderate	<ul style="list-style-type: none"> <li>▪ Several firm contracts are already in place for the B2G and B2B segments. These include projects with the Mexican Housing Institute, Iberdola, and Suncore (380 installations in Chihuahua, Mexico).</li> <li>▪ Illuméxico has a strong track record of winning government contracts, but the political situation is fluid and the government may dramatically curtail its solar program this year.</li> </ul>
	Legal and regulatory energy reforms in Mexico	Low	<ul style="list-style-type: none"> <li>▪ The long-term electrification of rural communities and marginal urban areas remains part of the Ministry of Energy's Development Program for the National Electricity System (2020-2034).</li> <li>▪ Solar energy systems have become one of the most preferred off-grid electricity generators as it is more economical and environment-friendly.</li> </ul>

	Contraction in margins due to rise in cost	Moderate	<ul style="list-style-type: none"> <li>▪ Increase in expenses for 2021 is mainly attributable to non-recurring expenses such as initial deployment of PAYGO to customers and employee severance costs. These costs are expected to improve profitability in the coming years.</li> <li>▪ Other cost reduction measures are underway. Part of Illuméxico's 2021 goal is to optimize SG&amp;A expenses through constant cost monitoring and stricter budget approvals.</li> </ul>
	Competition with other solar developers	Low	<ul style="list-style-type: none"> <li>▪ Competition in Mexico is concentrated on solar installations (for public tenders) and not so much about the provision of long-term maintenance services. That makes Illumexico the only solar provider in Mexico that is focused on giving a service model to the users, including maintenance and battery replacement services in the long-term.</li> <li>▪ Illumexico has experience in dealing with government tenders with proven ability to install 10k systems per year. This is well-complemented by its constantly improving technology (with PayGo/Angaza and offline monitoring system) and will place the enterprise at an advantage over other solar energy providers in Latin America.</li> </ul>
Illuméxico unable to meet debt service obligations	Credit risk with the Mexican government	Low	<ul style="list-style-type: none"> <li>▪ Of the outstanding FSUE receivables in 2020, three payments have already been made. The full amount is expected to be settled in July 2021.</li> <li>▪ Funds for FSUE projects have already been allocated to a trust fund. The legal protection provided by a trust fund substantially reduces the risk of non-payment associated with government contracts.</li> </ul>
	Credit risk with retail customers (B2C)	Moderate	<ul style="list-style-type: none"> <li>▪ Illuméxico uses Angaza's payment technology that allows remote monitoring and locking of electricity service whenever a customer's payment is not up-to date.</li> <li>▪ Continuous roll out of PAYGO shows promising results with payment rates higher by 0.3%-0.4% than the normal payment collection without Angaza.</li> <li>▪ Along with the goal to scale up the B2C market, more stringent credit measures are in place to assess potential customers. Customer portfolio is also regularly reviewed to identify communities with payment challenges.</li> </ul>

		<ul style="list-style-type: none"> <li>Other payment options have been made more convenient (e.g., providing payment points nearer to the communities). Illuméxico also formed a dedicated service team tasked to monitor service level and customer negotiations.</li> </ul>
	<p>Inability to secure additional funding needed for capex and working capital needs</p> <p>Moderate</p>	<ul style="list-style-type: none"> <li>Illuméxico has already identified potential investors for their equity raise and is also working on securing debt financing. Investors' positive interest in social impact and overall business model will give Illuméxico a strong likelihood of obtaining the funding it needs.</li> <li>Illuméxico has an existing USD 310K (MXN 6.2M) line with BBVA bank from which working capital loans can be drawn from. Increase in lines with BBVA and establishment of credit lines with other financing institutions are currently being negotiated.</li> </ul>

### Conclusion

We recommend continued support to Illuméxico through the proposed USD 75,000 loan noting the social enterprises' strong impact score and adequate credit score. Loan repayment is expected to be sourced from monthly customer payments channeled through Angaza's PAYGO technology. We draw additional comfort from Illuméxico's satisfactory repayment experience on term loan previously extended by Beneficial Returns.

We recognize the risk that government contracts may dwindle this year given possible curtailments of the Mexican government's solar programs. Illuméxico already has several firm contracts in both B2B and B2G segments and has a good line up of prospective bids. Its solid track record of winning and fulfilling contracts gives Illuméxico a good chance of winning should any tender be issued. With government contracts winding down, the ability to onboard new retail customers becomes a major challenge to Illuméxico as this is crucial to sustain profitability. We believe this is mitigated by aggressive marketing strategies and customer support improvements that have been put in place to propel and retain retail customers. Another risk identified is the inability to source fund for capex and working capital requirements. Illuméxico's long-standing relationship with its investors and lenders sufficiently cushions this risk.



## Appendix 1: Illuméxico Impact Assessment

## Impact score: 19 out of 21

Prospective borrowers are rated with 1 point for Low, 2 points for Moderate and 3 points for High. Minimum score of 15 for approval.

	Low	Moderate	High	Score
<b>1 SCALE</b> Is the social enterprise addressing a major social or environmental problem and do they have the capacity to make a measurable, positive difference themselves or by influencing others?			✓	3
<b>2 SYSTEMIC CHANGE</b> Is the social enterprise focused on systemic change? In other words, would the impact continue even if the social enterprise went out of business?		✓		2
<b>3 SUSTAINABILITY</b> Does the social enterprise have a business model that is or has a strong likelihood of being sustainable? This may include a portion of philanthropic revenue provided that is sustainable.		✓		2
<b>4 STAKEHOLDER ENGAGEMENT</b> Does the social enterprise engage all stakeholders in their work? Is the social enterprise building local, human resources? Does it actively share its insights with others? Are indigenous communities involved?			✓	3
<b>5 RIGOR</b> How does the social enterprise measure its own impact and how well is it doing against these metrics?			✓	3
<b>6 EFFICIENCY</b> Are the social enterprise's impact outcomes cost efficient vs. other interventions? If not, is it likely that they will become so as the social enterprise grows?			✓	3
<b>7 INTENTION</b> How committed to its social or environmental mission is the social enterprise?			✓	3
<b>TOTAL</b>				<b>19</b>

## Appendix 2: Illuméxico Credit Assessment

## Credit score: 17 out of 21

Prospective borrowers are rated with 1 point for Low, 2 points for Moderate and 3 points for High. Minimum score of 15 for approval.

	Low	Moderate	High	Score
<b>1 BELIEF IN MANAGEMENT</b> Does the social enterprise have a strong management team (extensive industry experience, strong leadership and entrepreneurial background)? Is the governance structure adequate?			✓	3
<b>2 ACCOMMODATIVE BUSINESS ENVIRONMENT</b> Is the social enterprise operating in an industry with low level of competition? Does the social enterprise provide products or services that have low threat of substitution?			✓	3
<b>3 QUALITY OF FINANCIAL INFORMATION</b> Can the financial information provided be depended on? Has its financial statements been audited?			✓	3
<b>4 ABILITY TO BE PROFITABLE</b> Does the social enterprise have a positive earnings trend? Are the earnings sustainable?		✓		2
<b>5 STRENGTH OF FINANCIAL POSITION</b> Does the social enterprise maintain adequate financial ratios (DSCR, Debt-to-equity, Current ratio) to support a debt obligation?			✓	3
<b>6 ABILITY TO SERVICE DEBT</b> Does the social enterprise have the ability to establish a strong cash position to meet its debt obligations on time?		✓		2
<b>7 COLLATERAL OR GUARANTEES</b> Is there collateral for the loan with an adequate loan-to-value amount? Is there a guarantor for the loan?	✓			1
<b>TOTAL</b>				17

Appendix 3: Photos of Impact of Iluméxico



