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# INDIA NON JUDICIAL

## Government of National Capital Territory of Delhi

### e-Stamp

Certificate No. : IN-DL84625120982381U  
 Certificate Issued Date : 07-Sep-2022 11:21 AM  
 Account Reference : IMPACC (PF)/ dl766013/ DELHI/ DL-DLH  
 Unique Doc. Reference : SUBIN-DL76601349649423031447U  
 Purchased by : CEEW AND VILLGRO  
 Description of Document : Article 5 General Agreement  
 Property Description : Not Applicable  
 Consideration Price (Rs.) : 0  
 (Zero)  
 First Party : CEEW AND VILLGRO  
 Second Party : BRLPS AND J WIRES  
 Stamp Duty Paid By : CEEW AND VILLGRO  
 Stamp Duty Amount(Rs.) : 100  
 (One Hundred only)



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**Memorandum of Understanding.**

This Memorandum of Understanding ("MoU"), is made and entered into on **September 8th, 2022** (the "Effective Date")

BY and AMONG

Powering Livelihoods (hereby referred to as PL), is a CEEW-Villgro initiative started in 2020, where 'CEEW' is registered as a Trust, duly organized under the laws of The Registration Act, 1908, and committed to The Indian Trust Act 1882 having its registered office at ISID Campus, 4, Vasant Kunj Institutional Area, New Delhi - 110070, India, hereinafter referred to as "CEEW" and 'Villgro' is registered as a non-profit section 8 company, having its registered office at 3rd Floor, IIT Madras Research Park, Kanagam Road, Taramani, (Behind Tidel Park, on Old Mahabalipuram Road), Chennai – 600113. (which expression shall, unless it is repugnant or contrary to the context or meaning thereof, mean and include its successors in office and assigns) of the FIRST PART;

And

Bihar Rural Livelihoods Promotion Society (BRLPS) commonly called as Jeevika an autonomous body under the Department of Rural Development, having its registered address at 1st Floor, Vidyut Bhawan, Annexe-II, Bailey Road, Patna- 800021 (Bihar), India hereinafter referred to as "BRLPS" (which expression shall unless it be repugnant or contrary to the context or meaning thereof, mean and include its successors in office and assigns) of the SECOND PART

And

Jeevika Women Initiative Renewable Energy and Solution Private Limited (J-WiRES), a private limited company and a company limited by shares having its registered address as Old Block office, Kishan Bhawan, Near police chowki, dobhi, Bihar, 824220 hereinafter referred to as "J-WiRES" (which expression shall unless it be repugnant or contrary to the context or meaning thereof, mean and include its successors in office and assigns) of the THIRD PART;

Powering Livelihoods, BRLPS and J-WiRES shall hereinafter collectively be called "The Parties" and either one of them as "Party"

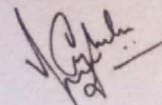
WHEREAS,

- A. The Council on Energy, Environment and Water herein referred to as "CEEW", is one of South Asia's leading not-for-profit policy research institutions. The Council uses data, integrated analysis, and strategic outreach to explain – and change – the use, reuse, and misuse of resources. It prides itself on the independence of its high-quality research, develops partnerships with public and private institutions, and engages with the wider public. In 2021, CEEW again featured extensively across nine categories in the '2020 Global Go To Think Tank Index Report'. The Council has also been consistently ranked among the world's top climate change think tanks

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- A. Villgro Innovation Foundation, hereafter referred to as "Villgro", founded in 2001, is India's largest social enterprise incubator. Villgro creates scalable, impactful and sustainable enterprises. Villgro has incubated over 279 social enterprises with seed funding of INR 574 million, many of which have gone on to generate around 4,000 jobs, secure INR 1,796 million in follow-on funding, and touch over 20 million underprivileged lives.
- B. CEEW and Villgro have embarked on a joint initiative, 'Powering Livelihoods (PL)', with a vision to power India's rural economy through distributed renewable energy (hereby referred to as DRE) livelihood solutions. The programme envisages a four-fold approach with gender-inclusive strategies at its core. The programme provides funding and mentoring support to select DRE livelihood technology enterprises (hereby referred as PL portfolio enterprises) to enable women-friendly product enhancements and commercial deployments, generate evidence at scale, disseminate knowledge to key stakeholders, and unlock sectoral support and growth.
- C. Bihar Rural Livelihoods Promotion Society (BRLPS) is an independent society supporting 1.3 Cr Households with the formation of 10.35 lacs SHGs for improving the livelihoods of rural poor and especially women under its JEEViKA project. The society is interested in the promotion of the project and in developing viable enterprise-based models for the delivery of clean energy products and services in Bihar.
- D. J-WiRES is a community-owned private limited company to carry on the business of the assembly, manufacturing, supply, design, trading, marketing, research, and training related to energy efficient solar allied products, electric and electronic products with the ambition of creating SELL (Solar Ecosystem for Local by Local), Plantation, Entrepreneurship development and creating a sustainable environmental path.
- E. Powering Livelihoods, Bihar Rural Livelihoods Promotion Society (BRLPS) and J-WiRES are interested in collaborating and working together to generate awareness, promotion and deployment of clean energy-powered livelihoods technologies amongst women micro-entrepreneurs, SHGs/FPO/PG networks and livelihood activities in the state, herein referred to as the "programme". In the first pilot year, the programme will operate in mutually selected districts of Bihar, aiming to deploy 1500 DRE-powered livelihood technologies among SHG women and additionally engaging 400 women SHG members in the promotion, demonstration, installation, and services of the products. The programme will also enable the development of the first-of-its-kind DRE appliances incubation cum experience centre in the state. The programme will be implemented in a phased-wise approach as laid out in Annexure 1.

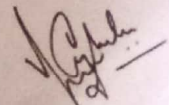
Powering Livelihoods, J-WiRES and BRLPS are now desirous of recording the said interest to collaborate by way of this "MoU" (Memorandum of Understanding)

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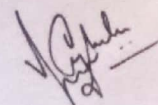
Now therefore, "The Parties" hereto, in consideration of the premises set forth herein above and of the mutual covenants and undertaking set forth hereinafter, hereby agree as follows:

1. Powering Livihoods shall be responsible for:
  - a) Overall coordination and management of the collaborative effort.
  - b) Providing necessary technical, research and management inputs to BRLPS and J-WiRES for awareness generation, implementation and management of clean energy-powered livihoods technology deployments in a phased approach identified through mutual consultation of the parties.
  - c) PL will financially support in meeting the part of the resource cost (a maximum of INR 8,00,000) required to onboard five (5) additional field staff for the first year of the programme. These field associates will be responsible for managing the field operations, ground activities, marketing efforts, sales and after-sales services needed for the programme.
  - d) Conduct an end-user (buyer) needs assessment for each DRE Livihood technology in the five districts, including economic viability analysis subject to required data provided by BRLPS/J-WiRES.
  - e) Organise virtual awareness and capacity-building sessions for State, District and Block level staff of BRLPS and J-WiRES on the viability of DRE-powered livihood applications to support rural livihoods with logistics and mobilisation support from BRLPS/J-WiRES.
  - f) PL would set up direct contact between J-WiRES and PL portfolio enterprises (as laid out in Annexure 2) and facilitate the first round of discussion to arrive at a mutually agreed sales commission, product supply process and delivery schedule.
  - g) To create the initial thriving market conditions, for only the first 150 non-subsidised/discounted commercial sales generated of PL-linked cohort enterprises products in the first three months of the MoU, PL will provide a 10% sales commission support to J-WiRES (Up to a maximum of INR 12,00,000, applicable only if all 150 sales are achieved in the first three months of the operation and are non-subsidised/non discounted commercial sales). Post which, PL will encourage its' portfolio enterprises to offer their own commission/sales margin (usually, 7-15% of the market rate) for their products. These sales margins will be enterprise-specific and may vary according to the product versions, minimum order quantities and their terms and conditions. J-WiRES and the enterprises will have separate discussions and individual agreements to facilitate this.

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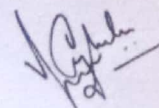




- h) To enhance demand generation, PL will work with its portfolio enterprises to offer a 40% cost subsidy for installing the first 100 product demonstration units. The owner of these units, hereby known as demo users, will have to be open to host frequent visitors to see these units and share their user experience with them. Selection of the SHG women members who will run and manage these demonstration units will be done on a mutually agreed selection basis. J-WiRES will oversee and manage the overall selection process and smooth running.
- i) PL will financially support (maximum budget of INR 10,00,000) J-WiRES to organise hyperlocal marketing events (minimum of 3 events with a minimum participation of 100 potential women buyers) to promote DRE Livelihood Products (especially PL enterprise products) and build a buzz in the region.
- j) PL will provide all printed copies of marketing and informative materials (flyers, brochures, videos, etc) required to increase awareness of DRE-powered livelihood technologies and their sales.
- k) PL will financially support J-WiRES to onboard, engage and incentivise specific women members/cadres as marketing agents to raise awareness about clean energy technologies for livelihoods, run local campaigns, and run demonstration sessions in conjugation with the demo users, generating qualified sales leads. Criteria of how the incentive structure would operate could be mutually decided between PL and J-WiRES.
- l) Organise short training for all the S-Mart women owners, demo users and marketing agents involved in the programme on the Technical know-how of the products and how to market them effectively. PL will financially support (upto a maximum of INR 5,00,000) J-WiRES to cover the logistical expenses of organising these training.
- m) Support J-WiRES and BRLPS to design an operation blueprint for a functional regional level incubation cum experience centre which acts as the centre for visitors (prospective end-users, NGOs, stakeholders etc. ) to experience the utilisation of various DRE-powered technologies. The centre will also function as a facility to run training on how to best use these technologies while simultaneously demonstrating the benefits of these technologies by keeping them in continuous running capacity. PL will also arrange for an exposure visit of the key BRLPS-J-WiRES staff to the other experience centre supported by it to enable an understanding of model operations and setup.
- n) PL with the support of its portfolio enterprise will provide a 100%

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subsidised demo unit for the viable technologies to be placed in the Incubation centre. Additionally, PL will also financially support J-WiRES (maximum of INR 3,00,000) to meet the cost of the first six months of operations of the incubation centre (raw materials purchase for the smooth running of these technologies, hiring the demonstration engagement staff required to run the centre, etc). J-WiRES and BRLPS will arrange the necessary infrastructure required for the setup (building, furnishings, electricity/water connections etc.) and meet the daily operational costs on their own. After six (6) months, J-WiRES can run this centre as a service model, where they can charge for every demonstration and training, to recover the cost of raw materials, staff and operations.

- o) PL will provide standard templates for MIS and KYC data collection to J-WiRES.
- p) PL will conduct an impact assessment of the appropriate representative sample of the deployments enabled because of this programme to understand the impact of DRE Livelihood technologies in reducing drudgery, improving income and allied socio-economic status of the women entrepreneurs and end-users.
- q) PL will work with J-WiRES and BRLPS to develop and propose a state policy/scheme for state-wide adoption of DRE Livelihood technologies integrating the learnings and evidence from this programme.
- r) Wherever possible, facilitate connections with backward and forward market linkages partners, other DRE product manufacturing institutions beyond PL technology enterprises etc., to link and strengthen the end-to-end value chain for DRE-powered rural livelihoods.

2. BRLPS will act as an advisor to J-WIRES and shall be responsible for:

- a) Establishing a dedicated state representative as a point of contact (POC) to facilitate rolling out, smooth functioning, coordination and monitoring of the programme.
- b) Nominate Nodal Officers at the District and Block level to coordinate with the J-WiRES team and PL staff. Issue separate directives to District and Block Mission Management Units to provide support for efficient execution of the programme objectives.
- c) Support in the rolling market/needs assessments through on-ground human resources and community cadres. Additional support in providing required secondary data for the market/needs assessment and impact assessment in identified districts and blocks.

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- d) BRLPS will facilitate the eligible SHG Women entrepreneurs members to get the loan facilities for DRE-powered livelihoods activities through SHG or any other Banking channel as per the SHG norms.
- e) Work with J-WiRES to ensure adequate infrastructure is made available for the proposed incubation cum experience centre and in providing the required support for its establishment and operations. Once established, BRLPS provides maximum visibility and exposure to the centre and hosts regular stakeholder visits, relevant training and high-profile dignitaries events at the centre.
- f) Support in logistics and participant (SHG members, SRLM staff etc.) mobilisations required to organise training, capacity building and DRE Livelihood awareness generation campaigns. PL will cover the necessary cost and event logistic expenses for it.
- g) Support in outreach and promotional campaigns for promoting the uptake of DRE livelihood technologies among the SHG women members.
- h) Facilitating the participation of jointly identified demo SHG women users, S-Mart members, and PL technology enterprises in national and state trade workshops and market fairs.

3. J-WiRES shall be responsible for:

- a) J-WiRES to share with PL the Terms of Reference (ToR), KRAs, and KPIs for the five field staff to be onboarded along with meeting the remaining resource cost (either by J-WiRES or BRLPS)
- b) J-WiRES to take the lead in the responsibility of managing the hired field staff in regular consultation with the PL team.
- c) J-WiRES to support the PL team gather required data for market/needs assessment, economic viability assessment, end-user financing mapping and design of the state-level policy. Wherever required, J-WiRES to also facilitate on-ground data collection requirements of PL.
- d) J-WiRES to work with the PL team to identify and finalise the list of selected districts and the geographical scope of the first phase of deployments.
- e) J-WiRES to identify, onboard, train and monitor suitable women members/S-Marts Entrepreneurs/Women-owned micro-enterprise leading DRE Livelihood technology deployment/sales in each block. J-WiRES to share the selection criteria, terms, and conditions of association with each of these entrepreneurs.

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- f) J-WiRES to run hyper-local marketing campaigns promoting DRE livelihood technologies covering at least 50% of the block populations in all identified blocks. In this regard, J-WiRES will onboard dedicated marketing agents (community cadres, other selected women members etc.) per block and devise an appropriate incentive structure for them.
- g) J-WiRES to lead the selection of the women users who would contribute towards the installation of the demo units, operate them, and manage the demonstrations. J-WiRES to help set up a standard demonstration procedure and lead management procedure for each demo unit.
- h) Overall, J-WiRES to onboard and engage with a total of 400 SHG women members, including S-Mart women owners, marketing agents, and demo users, in the promotion, demonstration, installation, and service management of these products.
- i) J-WiRES will manage the logistics arrangement of all the hyperlocal marketing events, training, awareness capacity-building workshops being organised as part of this programme.
- j) J-WiRES will target minimum commercial sales of a total of 1500 PL portfolio enterprise-linked products across all the selected districts in the first year of operations of this MoU.
- k) J-WiRES to provide appropriate brand placements to PL at all premises of operation under this programme, including the incubation/experience centre, hyper-local marketing events, selected S-Mart shops, demo centres etc.
- l) J-WiRES to support in monitoring the progress of the programme, product installation verifications, customer KYC, predefined service delivery etc. and in conducting impact assessment through maintaining a robust MIS system and collecting end-user KYC data monthly.
- m) J-WiRES to share fortnightly updates with the PL team on the progress of the program, learnings, reflections, challenges etc., from the ground.
- n) J-WiRES to champion PL, CEEW and Villgro at appropriate public forums/Government meetings to further the cause of Powering Livelihoods.

This "MoU" is based upon the agreement that the information contained herein or made available in connection with any further investigation is strictly confidential and for the exclusive use of Powering Livelihoods, Bihar Rural Livelihoods Promotion Society (BRLPS) and J-WIRES. This document shall not be photocopied, reproduced, or distributed to others at any time without the parties' prior written consent. Provided that, should any party be

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required to disclose any information to the requirements of laws or regulations applicable to it, it shall be able to disclose such information as required without any prior consent.

4. This MoU shall come into force and effect from the Effective Date and shall remain in full force until March'23 in the first instance and thereafter extendable by mutual consent in writing for the time period aligned among parties post a discussion. Powering Livelihoods, BRLPS and J-WiRES shall initiate negotiation for an extension of this MoU at least one month prior to the expiry of the MoU.
5. For the current stipulated phase of this MoU, all monetary funds will be transferred latest till March'23 and a complete fund utilisation report need to be submitted by then. Post which, based on the achievement of the outcomes, a revised action plan could be devised on mutual consideration to extend the MoU.
6. All monetary payments mentioned in the programme budget outlay (Annexure 1) are subject to availability and access to funds from PL program donors. The maximum expense limit for each budget head will only be as per the outlay, and no further expenses beyond it will be supported by PL. In the event of freezing or blocking of such funds due to instructions from donors or regulatory authorities, the payments will stand suspended until further notice.
7. All parties agree to designate a single point of contact (SPoC) for the governance of the agreement during the agreed period. Any change in any object/article of the agreement would have to be executed by a written change process owned by mutual SPOCs.
8. All Parties will jointly conduct monitoring and review visits in the identified districts to track progress.
9. A separate service agreement will be signed between J-WiRES and Villgro as an annexure to this MOU to facilitate the transfer of funds with full terms and conditions for every payment instalment.
10. If at any point in time one party is unable or unwilling to continue with the MoU, then the concerned party has to notify the other party promptly, and on completion of one (1) month after such notification, this MoU will be terminated.
11. A party may terminate this MoU forthwith if any other party commits a breach of any of the terms hereof and shall have failed to rectify such breach within thirty days of the receipt of a written notice in this regard having been served on it by the First party.
12. Any act of misdemeanour/dishonesty by a Party will automatically result in termination of this contract. With the mutual consent of the parties, this MoU may also be terminated with at least one month's notice period.
13. Powering Livelihoods, Bihar Rural Livelihoods Promotion Society (BRLPS) and J-WiRES warrant to hold each other fully harmless and responsible at all times against

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any loss, damages, costs and expenses, including Attorney's fees, which may be incurred by either Party as a result of any action on the part of any of them.

14. By entering into this MOU, the Parties undertake:
  - a) To respect each other's intellectual property,
  - b) Not to use each other's intellectual property without the prior express written consent of the other,
  - c) Ensure the confidentiality of such intellectual property within their respective organisations.
  
15. No rights of ownership or any other interest, right or title or license is granted under this MoU on the other Party's trademarks, copyrights, patents, trade secrets, or any other intellectual property rights.
  
16. Any use of trademarks and logos of the Parties would require specific agreement/ prior written consent of the Parties.
  
17. The communication related to all the activities conducted under this collaboration will include the branding of all the Parties. None of the parties will make any press release and/or public announcement, nor disseminate any other communications product/collateral regarding the project or its outcomes without the prior written approval (email communication is acceptable) of the other parties, the consent form which will not be unreasonably withheld or delayed. Any communications material/announcement/press release/collateral related to the project or its outcomes will be discussed and agreed upon by both parties prior to dissemination.
  
18. This MoU shall be subject to the laws of India. Controversies and claims arising out of or related to this Agreement, or the breach thereof shall be settled by the appropriate court of law in Patna, Bihar and New Delhi, India. However, before undertaking any legal steps, the parties hereby agree to mobilize all efforts to resolve any dispute, claim or controversy that may arise out of or in connection with this MoU or the application, implementation, validity, breach or termination thereof through mutual consultations between them. Any dispute, which could not be resolved amicably, shall be settled as per the provisions of the Arbitration & Conciliation Act of India, 1996 (as amended from time to time).

IN WITNESS WHEREOF, the Parties hereto have caused this MoU to be duly executed by their respective authorised representatives as of the day and year first above written.

 (CEEW)	SRINIVAS RAMANUJ AM (Villgro)	 (BRLPS)	
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Witness: \_\_\_\_\_

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**Annexure 1**  
**Details of the Financial Support**

Powering Livelihoods will financially support J-WiRES as per the following outlay to encourage a minimum of 1500 commercial sales of DRE livelihood technologies in the mutually selected districts of the state of Bihar by supporting the engagement of around 400 women SHG women members of J-WiRES, BRLPS community in direct product sales, demonstrations, marketing service and installation capacity.

<b>Section (A): Payment to J-WiRES for services rendered</b>	
<b>Budget Head</b>	<b>Amount in INR</b>
Incubation centre operations cost	INR 3,00,000
Training and capacity building cost	INR 5,00,000
Hyperlocal marketing event expenses	INR 6,00,000
Demand generation incentive for women marketing agents	INR 4,00,000
Salary support for five additional field staff hire	INR 8,00,000
J-WiRES Facilitation Fee	INR 3,00,000
<b>Subtotal (A)</b>	<b>INR 29,00,000</b>
This amount will be directly payable to J-Wires on the provision of a GST service invoice in 3 equal instalments (10/09/2022, 01/12/2022, 01/03/2023) subject to the satisfactory completion of all mutually agreeable targets as per the separate service agreement signed with Villgro.	
<b>Section (B): Subsidy/discount/promotional sales commission made available through PL Portfolio enterprises</b>	
<b>Description</b>	<b>Estimated Expenditure by PL*</b>
100% cost subsidy for products to be placed at Incubation Centre	INR 10,00,000
40% cost subsidy for 100 demonstration units/hyper local marketing deployments	INR 32,00,000
10% promotional sales commission for the first 150 non-subsidised sales, applicable only if target achieved in the first 3 months	INR 12,00,000
<b>Subtotal (B)</b>	<b>INR 54,00,000</b>
PL will directly support the PL-supported cohort enterprise to provide this cost subsidy/discount to J-WiRES/end-user purchasing the product, no direct amount transfer will happen from PL to J-Wires/end users in this case.	
<b>Section (C): External expenditure cost being borne internally by CEEW-Villgro</b>	
<b>Description</b>	<b>Approx Amount in INR</b>
Exposure visit to other model incubation centre	INR 5,00,000
Technical support in designing the operational blueprint of the Incubation centre	INR 2,00,000

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Trainer/Expert cost for the training	INR 5,00,000
Design and the printing cost for the marketing collaterals	INR 5,00,000
<b>Subtotal (C)</b>	<b>INR 17,00,000</b>
<b>Total (Subtotal A + Subtotal B+ Subtotal C+ Subtotal D)</b>	<b>INR 1,00,00,000</b>

\*The average product cost is estimated at INR 80,000 for this calculation.

Additionally, J-WiRES could earn a potential income of an estimated INR 1,08,00,000\* through sales (subject to minimum order quantity and enterprise individual T&C) of PL Portfolio Enterprises linked products.

*\*This is an estimated amount calculated based on an assumption of an average 10-15% sales margin (subject to minimum order quantity and their individual T&Cs) being offered by PL Portfolio enterprises for the remaining 1350 unit commercial sales under the programme target. The actuals will vary basis the direct arrangement and terms and conditions between J-WIRES and the enterprises as per the separate agreement signed between J-WIRES and the Enterprises.*

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**Annexure 2  
PL Enterprise Technologies**

**MULTIPURPOSE FOOD PROCESSING MACHINE**

DRE-powered multi-purpose food processors can be used for extracting juices, pulp and essential oil from various vegetables, fruits, herbs and flowers. They could enhance the value of the product, increase local incomes and generate additional livelihoods for farmers, micro-entrepreneurs and SHGs across the country. The machine is available in five different variants.

**Potential deployment:** Pan India, All agro climatic zones

**Number of products deployed so far:** ~500, 44% women consumers

**Value chain:** Horticulture, Medicinal Products etc

**Enterprise:** Dharambir food processing

**Product Details:** Weight of machine: 125 kg, Motor speed: 1440 rpm, Rotor/Centrifuge speed: 360 rpm

**Electricity consumption:** 1.5 units/ hour

Product Variant	V20	V60	V60T	V120	V180
Juice Capacity (l/hr)	40	80	80	150	200
Extract Capacity (l/hr)	1.5	3	3	7	8
Cost (INR)	~65,000	~89,000	~1,07,000	~1,42,000	~2,13,000

**Government Subsidy Available :** Ministry of Agriculture and Farmers Welfare provides support for Post-Harvest Technology (PHT) units to be established in the production catchments with 50% assistance from the Government of India limited to Rs. 1.25 lakhs per machine/technology. (Additional 10 % assistance limited to Rs. 1.50 lakhs will be available for SC, ST, small & marginal farmers, women, and NE States beneficiary). Remaining cost will be borne by beneficiary. Additional provisions to setup common hiring centres and village level equipment banks.

₹105,000, Estimated annual income	14-15 months, Payback period*
Cost of 10 year operations (NPV)	
DRE: ₹150,000	Grid: ₹637,000

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### REFRIGERATOR AND DEEP FREEZER

Energy-efficient off-grid DC refrigerator and deep freezer. There are four variants of solar refrigerator and freezer with digital display, durable finish, and environment-friendly technology (no chlorofluorocarbon emissions). It is designed for the storage of products ranging from life-saving medicines and vaccines, to dairy, fishery and drinks. The solar-powered refrigerators and freezer are mobile and can be mounted on trucks, buses, boats, vans, e-rickshaws, etc.

**Potential deployment:** Pan India, All agro climatic zones

**States where product is deployed:** Assam, Chhattisgarh, Delhi, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Uttar Pradesh

**Number of products deployed:** ~250, 27% women

**Enterprise:** Devidayal Solar

**Energy Requirement:** 0.62kwh/24h, under STC.Temp. working range +1 degree celsius to +11 degree celsius

Product Variant	DDSF-100	DDSF-150	DDSF - 200	DDSF - 268
Capacity (l)	100	150	200	268
Solar Module	100Wp X 3	150Wp X 2	150Wp X 2	250Wp X 2
Lead Acid Battery	100Ah	150Ah	150Ah	120Ah X 2
Compressor	65W	95W	95W	155W
Cost (INR) Complete set with panels, battery, structure, cable, GST	~65,000	~75,000	~85,000	~ 105,000

**Financing, Subsidy Available:** 75% finance available to end user (KYC documents required) through an enterprise end-user financing partner.

**Government Subsidy Available:** MSME provided business loan for Vendors, Traders, Shopkeepers and other Service Sector activities under the MUDRA scheme.

₹38,500, Estimated annual income	28-34 months, Payback period*
Cost of 10 year operations (NPV)	
DRE: ₹120,000	Grid: ₹152,000

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### BULK MILK CHILLER

Solar Bulk Milk Coolers are powered by Solar Photovoltaics, and it stores energy in the thermal storage system (TSS) for cooling during non-solar hours. The system provides an affordable and reliable cooling backup for bulk milk coolers. Thermal storage systems store cooling energy in the form of ice, which is one of the most reliable, cost-effective and non-hazardous forms of energy storage.

**Potential deployment:** Bihar, Gujarat, Maharashtra, Uttar Pradesh

**States where product is deployed:** Bihar, Gujarat, Uttar Pradesh

**Number of products deployed:** ~50

**Enterprise:** Inficold India Pvt. Ltd

### Product Details

<b>Product</b>	Bulk Milk Cooler
<b>Capacity</b>	500 litres
<b>Solar photovoltaic panel capacity</b>	5.2 kWp
<b>Battery</b>	48 V 100 Ah
<b>Temperature Range</b>	4 °C–10 °C
<b>Cost (INR)</b>	~ 4.5 lakh

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**SOLAR COLD STORAGE**

Energy-efficient, portable, modular cold storage and predictive market analytics for farmers, farmer co-operatives, entrepreneurs, and aggregators.

**Potential deployment:** Pan India

**Number of products deployed:** ~350, 22% women customers

**Enterprise:** Ecozen, Coolcrop, Inficold

**Product Details:**

<b>Product</b>	Solar Cold Storage
<b>Product Capacity</b>	4- 10 MT
<b>Cold Room Size</b>	40ft X 8 ft X 9.5ft
<b>Temperature Range</b>	4°C and above

**Pricing:**

Enterprise	Ecozen	Coolcrop	PLUSS
<b>Capacity</b>	Portable Units: 2 MT - 5 MT Fixed Units: 5MT - 10 MT	2MT - 10MT	2MT- 5MT
<b>Product cost (INR inclusive of GST, Transportation costs additional)</b>			
<b>2-3 MT</b>	2 MT Portable Unit: INR 10 lacs	INR 6.85 lacs (Additional cost of GST)	INR 8.5 lacs (inclusive of GST, supply and installation)
<b>4-5 MT</b>	5 MT Fixed unit without Portability: INR 13.5 lacs 5 MT Portable unit : INR 14.5 lacs (Additional cost of transportation and GST )	INR 10.45 lacs (Additional cost of GST)	5 MT - INR 14.7 lacs (inclusive of GST, supply and installation)

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8 MT	8 MT Fixed Unit without Portability: INR 16 lacs (Additional cost of transportation and GST )	NA	NA
10 MT	10 MT Fixed unit without Portability: INR 22 lacs (Additional cost of transportation and GST )	9-10 MT - INR 18.8 lacs (Additional cost of GST)	NA
<b>Enterprise</b>	<b>Ecozen</b>	<b>Coolcrop</b>	<b>PLUSS</b>
<b>Financing/subsidy availability</b>		Financing Models to ensure farmers can use the solutions on service basis (CaaS)	
<b>Market linkage/buyback option and provisions</b>	NA	Tailored Linkages with buyers from specific regions and produce varieties.	NA
<b>Training</b>		Capacity Building & Training to ensure with the buyers.	
<b>After-sales service</b>	1 year warranty	1 year warranty	Solar Inverters are warrantied for 5 years against any manufacturing defects. The condensing unit & the controller have a warranty of 1-year against manufacturing defects. One-year warranty against any manufacturing defects and workmanship from the date of completion of work.

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<b>Additional Cost</b>	NA	NA	Annual maintenance contract: Rs. 55,000 for annual service and maintenance. Maximum 3-visits/year. Additional visits and part costs are charged at actuals.
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**Government Scheme:** MoFPI under the Pradhan Mnatri Krishi Sampada Yojna provides grant in aid @ 35% of the total cost of plant & machinery and technical civil works for storage infrastructure including Pack House and Pre cooling unit, ripening chambe and transport infrastructure. For value addition and processing infrastructure including frozen storage/ deep freezers associated and integral to the processing, grant-in-aid @ 50% will be provided.

₹360,000, Estimated annual income	63-87 months, Payback period*
Cost of 10 year operations (NPV)	
DRE: ₹2,093,000	Grid: ₹2,323,000

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**BIOMASS REFRIGERATION SYSTEM**

Patented refrigeration technology powered by biomass or farm waste. This allows farmers to increase the shelf life of their produce and negotiate better prices in an environmentally sustainable manner. The technology has multiple uses including cold storage, pre-cooling, ripening or mushroom growing units.

**Potential deployment:** Pan India

**States where product is deployed:** Rajasthan, Gujarat, Madhya Pradesh, Maharashtra, Telangana Punjab, Haryana, Karnataka, Tamil Nadu

**Number of products deployed:** ~30

**Enterprise:** New Leaf Dynamics

**Product Details**

<b>Product</b>	Greenchill Biomass refrigeration system
<b>Power required</b>	0.3 kW
<b>Fuel used</b>	Bio-mass based (Rice husk (parali), wheat husk, straw, biomass pellets, waste wood, dry dung cakes, or any crop waste etc.)
<b>Storage capacity</b>	15 Mt of fruit, vegetables, fish
<b>Milk storage</b>	500–1000 litres
<b>Dimensions</b>	2 × 10 × 9 ft
<b>Adjustable temperature</b>	-5 °C to 18 °C
<b>Cost (INR)</b>	INR 13 lakhs (Incl. GST) Additional cost of transportation
<b>Additional Cost</b>	0 – 0 level platform floor with shed is required to be built by customer.

**After Sales support:** No additional cost Installation Site Training is provided. 1-year comprehensive on-site warranty support.

**Financing/subsidy availability:** Upto 50 % subsidy and upto 75%Financing

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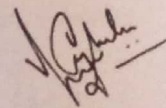


₹430,000, Estimated annual income	38-51 months, Payback period*
Cost of 10-year operations (NPV)	
DRE: ₹1,879,000	Grid: ₹3,814,000

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### SOLAR DRYERS

It is a system that uses solar energy to dry fruits and vegetables. The dryer supplies controlled and optimised heat to the product and protects products from UV radiation, dust, dirt, insects, and pollution. This results in value addition of the product and increases the shelf life to 6 months or more.

**Number of products installed:** ~400

**Enterprise:** Raheja Solar Food Processing Pvt Ltd

### **Product Details**

<b>Drying capacity</b>	20 kg/batch - 500 kg/batch
<b>Solar panel</b>	5 W 12V - 120 W 12 V
<b>Air Flow</b>	Forced Convection using 12 V Fan Number of Fan:1 - 5
<b>Total Drying area</b>	5 sq ft - 360 sq ft
<b>Maximum temperature</b>	50 - 60 degree celsius
<b>Size of solar dryer</b>	Width: 26 inches - 8ft Length: 43.5 inches - 24ft
<b>Capacity</b>	5 kg - 500 kg per batch

### **Pricing:**

5kg - INR 6,500, 20 Kg - INR 15,500, 40 kg - INR 31,500, 60 kg - INR 46,500, 80 kg - INR 62,000 100 kg - INR 77,500, 500 kg - INR 141,750 \* Additional GST and transportation costs

**Market linkage/buyback option and provisions:** We will provide standards of solar dried products in terms of shape, size, and basic visual characteristics according to market requirements.

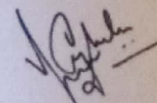
**After Sales Support:** Among all parts, minimum life is of covering sheet which is 5 years. Other than that, only operating part is solar panel which has warranty of 25 years and rest structure life depends upon regular cleaning and maintenance. Along with the solar dryer, buyers will get the assembly manual to easily install the solar dryer by themselves and basic training manual to use the solar dryer. Additionally, we also provide solar drying techniques training of 2 days for at least 10 buyers at one location @Rs. 2,000. This training is necessary

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for buyers who want buyback, to get trained with market standard techniques. We will certify buyers who have successfully completed training.

**Financing/subsidy availability:** Upto 50 % of the product financing is available with purchase of minimum 50 solar dryers. The rate of interest would be between 15 - 20 % per year, without collateral.

₹58,500, Estimated annual income	17-20 months, Payback period*
Cost of 10 year operations (NPV)	
DRE: ₹100,000	Grid: ₹1,224,000

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**SOLAR DRYER (PCM BASED)**

Phase Change Materials (PCM) integrated dryer offers an advantage of 24x7 consistent drying. Can be used to dry vegetables, spice, fruits, meat.

**States where product is installed:** Arunachal Pradesh, Haryana, Maharashtra, Meghalaya, Nagaland, Tamil Nadu

**Number of products installed:** ~25

**Enterprise:** Pluss Advanced technologies

**Product Details**

<b>Product</b>	Solar (PCM) dryer
<b>Battery</b>	12V,7Ah
<b>Charge controller</b>	12V,6A
<b>Solar panel</b>	10W x 2
<b>Motor type</b>	PMDC, 4 fans of 0.8 W each
<b>Drying capacity</b>	20 kg/batch
<b>Number of evacuated tube collectors</b>	20,1800mm length, 58 mm outer diameter
<b>Capacity</b>	20-25 kg per batch
<b>Cost (INR)</b>	INR 1.85 lacs (inclusive all cost)
<b>Additional Cost</b>	Rs. 15,000 for annual service and maintenance. Maximum 2 on-site visit/year.

**Market linkage/buyback option and provisions:** PLUSS has tied up with NGO, Advit Foundation who can help users link to appropriate market opportunities. For large installations (greater than 10 dryers), PLUSS can offer guaranteed buy-back from the communities for dried products. PLUSS will also link the adopters to appropriate buyers, based on region and dried produce.

**After Sales Support:** 1 year warranty against any manufacturing defects

**Financing, Subsidy Availability :** PLUSS has no tie-ups for subsidy. However, any subsidies or grant opportunities applicable under the MoFPI, Govt. of India or MIDH schemes

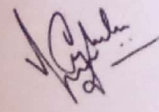


may be availed by the buyer. PLUSS can also arrange to help submit proposals in partnerships with interested end-users for CSR or pilot demonstration grants. PLUSS can also help liaise with appropriate government agencies should the end-user desire the same for release of tenders by government or private companies. PLUSS encourages end-users to form SHGs to take funding and set up Aagun® farms and operate them on a pay per use model or as a service model

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### SOLAR-POWERED FODDER GROW STATION

A low-cost, microclimate-controlled grow house installed in a 12 sq ft area uses Fogponics technology, which uses water in a vapour form to minimise the water requirement, to produce green fodder. With less than a bucket of water, very little space, and very little power one can harvest more fresh green fodder every day.

**Potential Deployment:** Pan India, Semi-arid regions

**Value Chain:** Dairy (green fodder), Mushroom Cultivation

**States where product is installed:** Andhra Pradesh, Gujarat, Karnataka, Orissa, Rajasthan, Uttar Pradesh

**Number of products installed:** ~140, 33% women customers

**Enterprise:** Hydrogreens

<b>Product</b>	Fodder grow station
<b>Product Dimensions</b>	7 ft h x 3.3 ft L x 4 ft W
<b>Total Racks</b>	7
<b>Total Trays</b>	28
<b>Seed Input per rack</b>	<4Kgs (4 Trays)
<b>Harvest capacity per rack</b>	25 to 30 Kg every day
<b>Power</b>	Single phase 230V AC
<b>Operating Temperature</b>	Up to 50 Degrees
<b>Cost (INR)</b>	42,000-45,000

**Subsidy, Financing available:** Hydrogreen has no tie-ups for subsidy/end user financing. However, there are subsidies/grant opportunities and financing opportunities applicable under the National Livestock Mission that can be availed by the buyer.

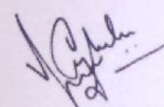
₹28,000, Estimated annual income	22-25 months, payback period*
Cost of 10 year operations (NPV)	
DRE: ₹60,000	Grid: ₹130,000

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### SOLAR SILK REELING MACHINE (UNNATI)

Compact, portable, solar powered Silk yarn Reeling, Twisting and Spinning machine. It is ideal for reeling silk for warp and for spinning a variety of silk yarns. Yarn for both Warp and Weft can be produced on this machine, called Unnati. Useful for Tassar, Eri & Muga silk yarns.

**Potential Deployment:** Mainly eastern, north-eastern India

**Value Chain:** Muga & Tasar Silk

**States where product is installed:** Bihar, Chattisgarh, Jharkhand, Maharashtra, Odisha, West Bengal

**Number of products installed:** ~12000, 96% women customers

**Enterprise:** Resham Sutra

### **Product Details**

<b>Product</b>	Silk Spinning Machine
<b>Power</b>	DC 25V, 15 W
<b>Solar Panel</b>	30 W
<b>Production capacity</b>	500 g/day

**Energy Requirement:** 0.03 units per hour

**Pricing:** Reeling: Rs 9000/- to 30,000/- average,

**Financing, Subsidy Available:** Pay as you go technological upgradation available

**Government Subsidy :** There is concessional interest rate support provided by Ministry of Textiles, NABARD to provide loan to weavers at the interest rate of 6% for a period of three years. Margin money assistance to a maximum of Rs. 10,000 per weaver.

₹30,000 - 56,000, Estimated Annual income increase	5-12 months Payback period*
Cost of 10 year operations (NPV)	
DRE: ₹31,500	Grid: ₹30,300

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### SOLAR-POWERED LOOM (SUNKARGHA)

Sunkargha is a solar-powered loom, it increases productivity by 2-3 times over traditional hand looms. It has 3 operating modes - solar motor assisted, pedal powered and Single Hand Motion. It is ideal for production of stripes and plains. Options of dobby and jacquard also available. Width ranges from 36" to 90"

**States where product is installed:** Andhra Pradesh, Assam, Arunachal Pradesh, Bihar, Chattisgarh, Jharkhand, Karnataka, Maharashtra, Meghalaya, Nagaland, Odisha, Uttarakhand, Uttar Pradesh, West Bengal

**Number of products installed:** ~80, 56% women users

**Enterprise:** Resham Sutra

#### Product Details

Product	Sunkargha
Power	DC 300 W
Solar Panel	600 W
Production capacity	16 m/day
Cost	INR 1,41,750

**Government Subsidy Available:** MSME under the Solar Charkha Mission provide Capital Subsidy @35% (INR 15,750 for solar charkha, INR 38,500 for solar loom). Capital subsidy @ 100 for work shed upto INR 1.2 Cr and solar grid 50 KW capacity. Also Interest subvention - 8%, working capital irrespective of the interest rates being charged by the Banks/Financial Institutions for a period of six months.

₹225,000, Annual income	8-9 months, Payback period*
Cost of 10-year operations (NPV)	
DRE: ₹181,000	Grid: ₹974,000

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### SOLAR POWERED MICRO PUMPS (LESS THAN 0.5 HP)

Solar powered micro pump system specifically designed for and with marginal farmers with land holding of 1-2 acre. The solar pump system is a hyper-efficient, portable, open-well submersible pump system. It is small enough to carry with a flow rate big enough to satisfy marginal farmers preferences at a bankable price point that does not depend on subsidy.

**Potential Deployment:** Gangetic Plain, Agri land with farm ponds

**Value chain:** Vegetable, Cash Crops, Horticulture products for 1-2 acre of land

**States where product is installed:** Jharkhand

**Number of products installed:** ~50

**Enterprise:** Khethworks

#### Product Details

<b>Product</b>	Portable Solar Pumps
<b>Motor Capacity</b>	0.34 HP BLDC Motor ((2x 160-watt panels)
<b>Weight</b>	4-kilogram pump and highly portable
<b>Solar PV Requirement</b>	320 Wp
<b>Rated Flow at head</b>	3600 Lt/hr at 10 m
<b>Operation</b>	Automatic switch on/off
<b>Capacity</b>	1 litre per second at 10 metres (15-metre shut-off)
<b>Coverage</b>	1-acre for a variety of crops
<b>Cost</b>	INR 45,000-50,000