Powering Livelihoods
A CEEW-VILLGRO INITIATIVE

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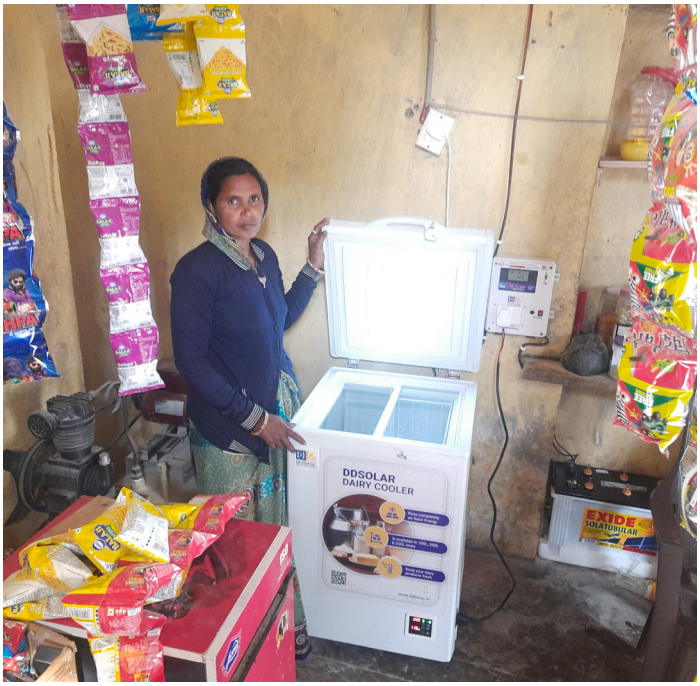
IMPACT OF

SMALL SOLAR REFRIGERATORS ON RURAL LIVELIHOODS



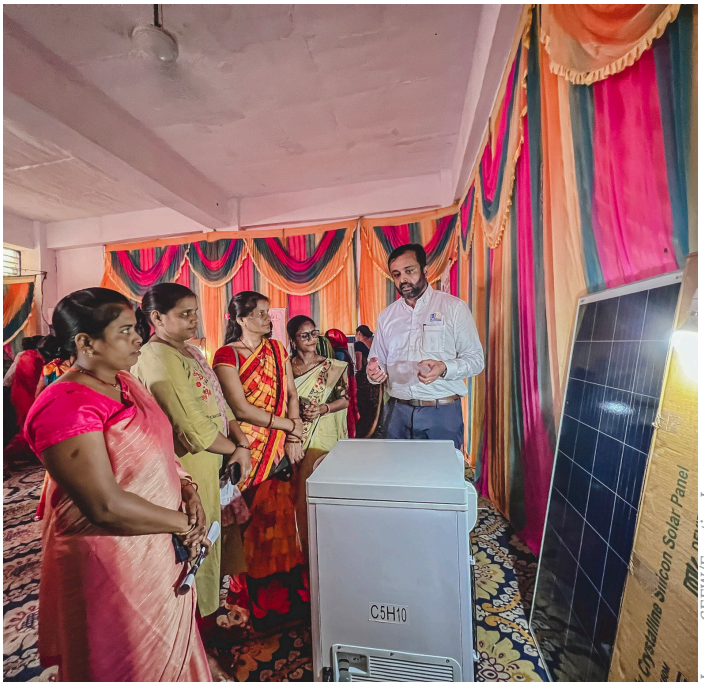


Image: CEEW/Emotive Lens

The energy-efficient and solar-powered DC refrigerator provides reliable cooling for a wide range of commodities (dairy products, fish, cold drinks, vaccines) with ozone-friendly refrigerant (Ozone depletion potential - 0). It decreases spoilage of perishables and provides savings on users' electricity bills. Till date, approximately 500 small solar DC refrigerators have been deployed in India.

The findings below are from a primary survey conducted through in-person and telephone interviews between February - September 2022.

States surveyed (share of respondents)

32% Uttar Pradesh	32% Karnataka	19% Meghalaya
13% Odisha	4% Rajasthan	

Respondents*

53 Total	83% Males	17% Females

55%	General
37%	SC/ST
8%	OBC

Users

76% using it for businesses	15% using it only for household use	9% using it for both

**85% respondents procured the machine at least six months before the survey, with 87% using it for at least six months.*

INCOME IMPACT

60% users experienced income increase

₹ 24,000 increase in annual income for a typical user from a baseline income of ₹ 60,000

₹ 2,100 of average savings from electricity bills in a year (assuming unit electricity price of ₹ 6).

**29% users had no change in their income (50% of these are household users)*
Source: CEEW analysis 2022

Top five spends of increased income

- **33%** used it for day-to-day expenditure
- **25%** invested in family
- **25%** reinvested in current business
- **15%** deposited in the bank as saving
- **1%** invested in another existing business

Source: CEEW analysis 2022

PRODUCTIVITY IMPACT

41%
users saw a **decrease in spoilage of products/goods**

34%
users reported **savings on electricity bill**

37%
users report an **increase in the quantity of products** that can be stored

31%
users with income increase **experienced more than one benefit**

Source: CEEW analysis 2022

Technology usage at the time of survey

94%	2%	4%
Using it	Not using it	Never used it

Top three business use cases

28%	22%	17%
Dairy	Frozen food items	Beverages

Source: CEEW analysis 2022

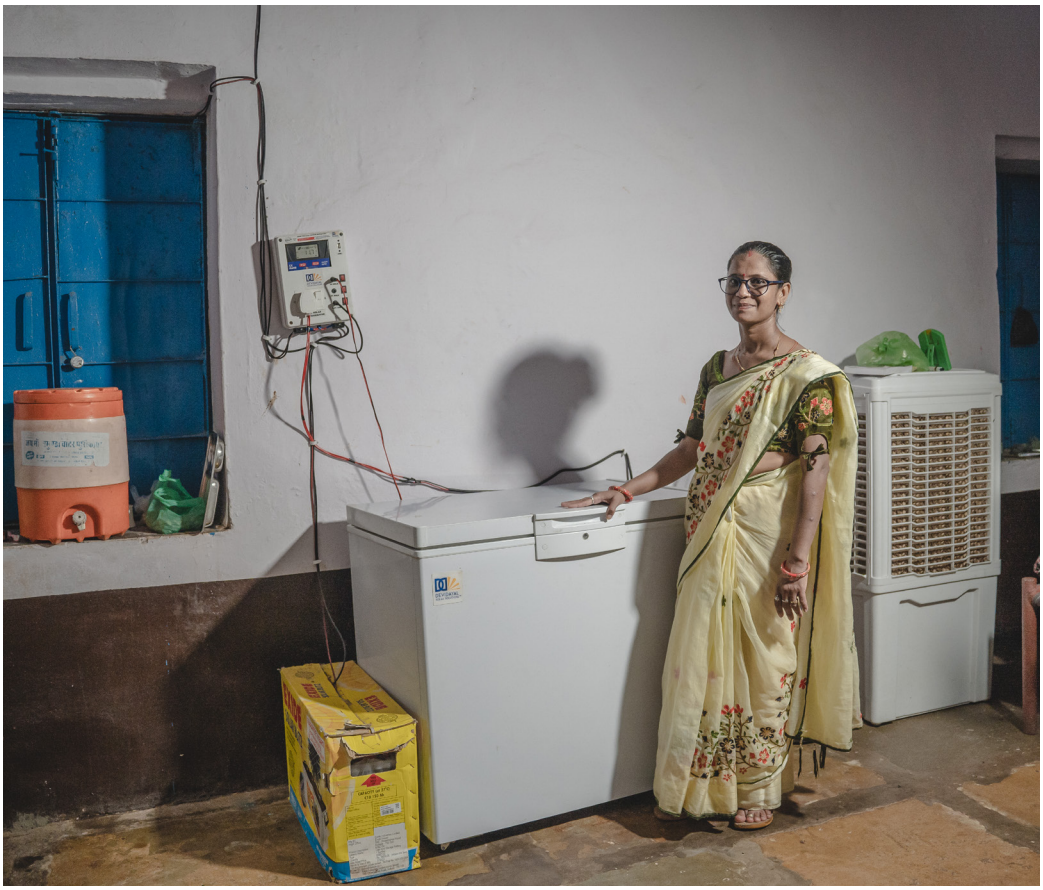


Image: CEEW/Emotive Lens

ENVIRONMENTAL IMPACT

29 MT
CO_2e abatement per year*

**For every 100 Units of Solar DC refrigerator used for 24 hrs for 275 days a year.*
Source: CEEW analysis 2022

About Powering Livelihoods

Powering Livelihoods, a CEEW-Villgro initiative, mainstreams clean energy-based livelihood solutions. The findings presented here are based on the Programme's interim impact assessment conducted by CEEW.

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