CLIMATE POLICY INITIATIVE

USICEF
US-India Clean Energy Finance

Distributed Solar Energy Initiatives in India

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Contents

About CPI

An overview of who we are and what we do

CLIMATE POLICY INITIATIVE

USICEF

We are an analytical and advisory organization with deep expertise in policy and finance.

We help governments, businesses, and financial institutions drive economic growth while addressing climate change.

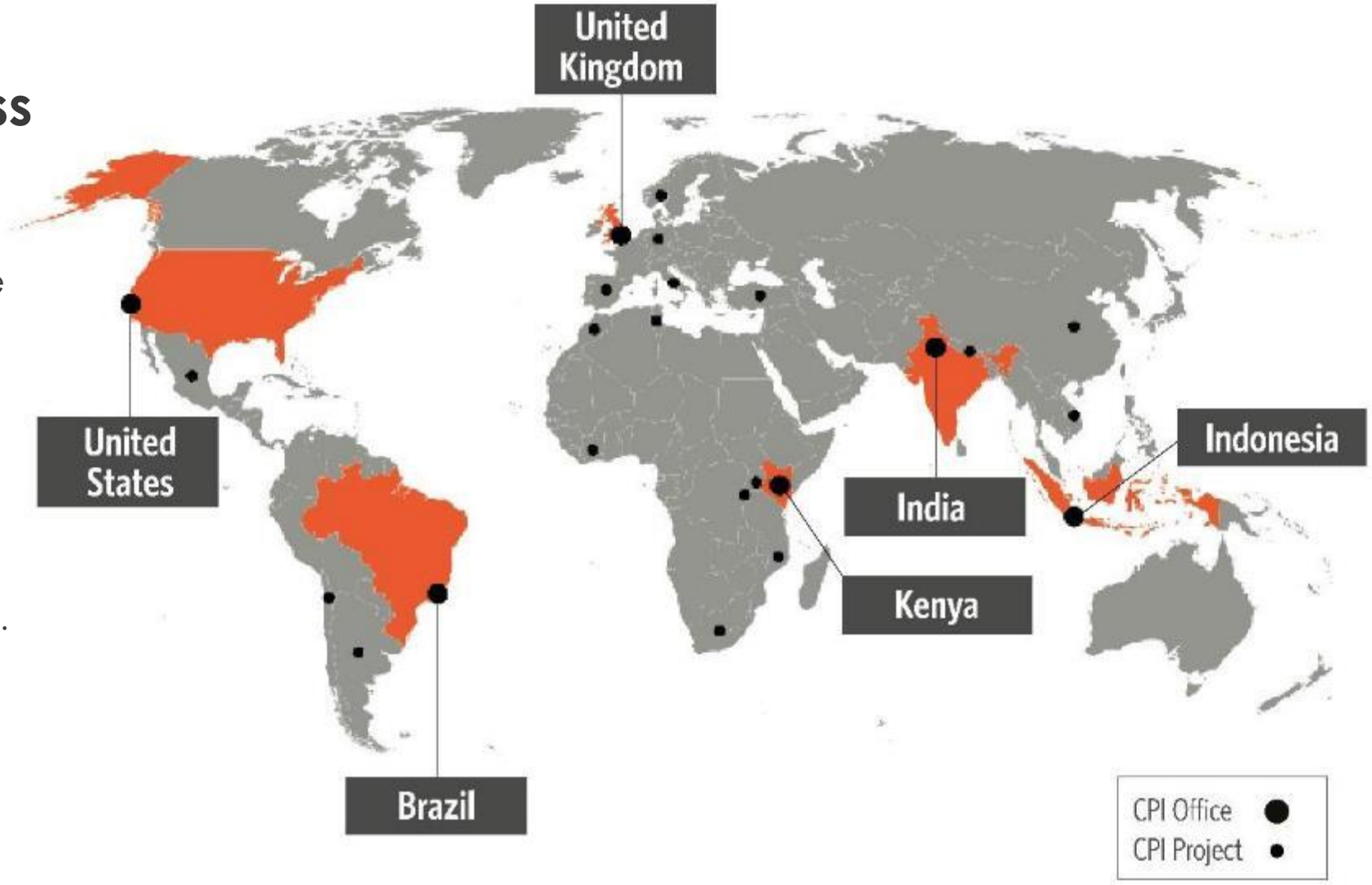
We are unique in our focus on finance, our ability to get the right people to the table, and our analytical rigor.

We bring global perspective and local expertise

6 Offices across the world

in Brazil, Kenya, India, Indonesia, the United Kingdom, and the United States.

We also have projects in other places with high potential for impact.



CLIMATE POLICY INITIATIVE

USICEF

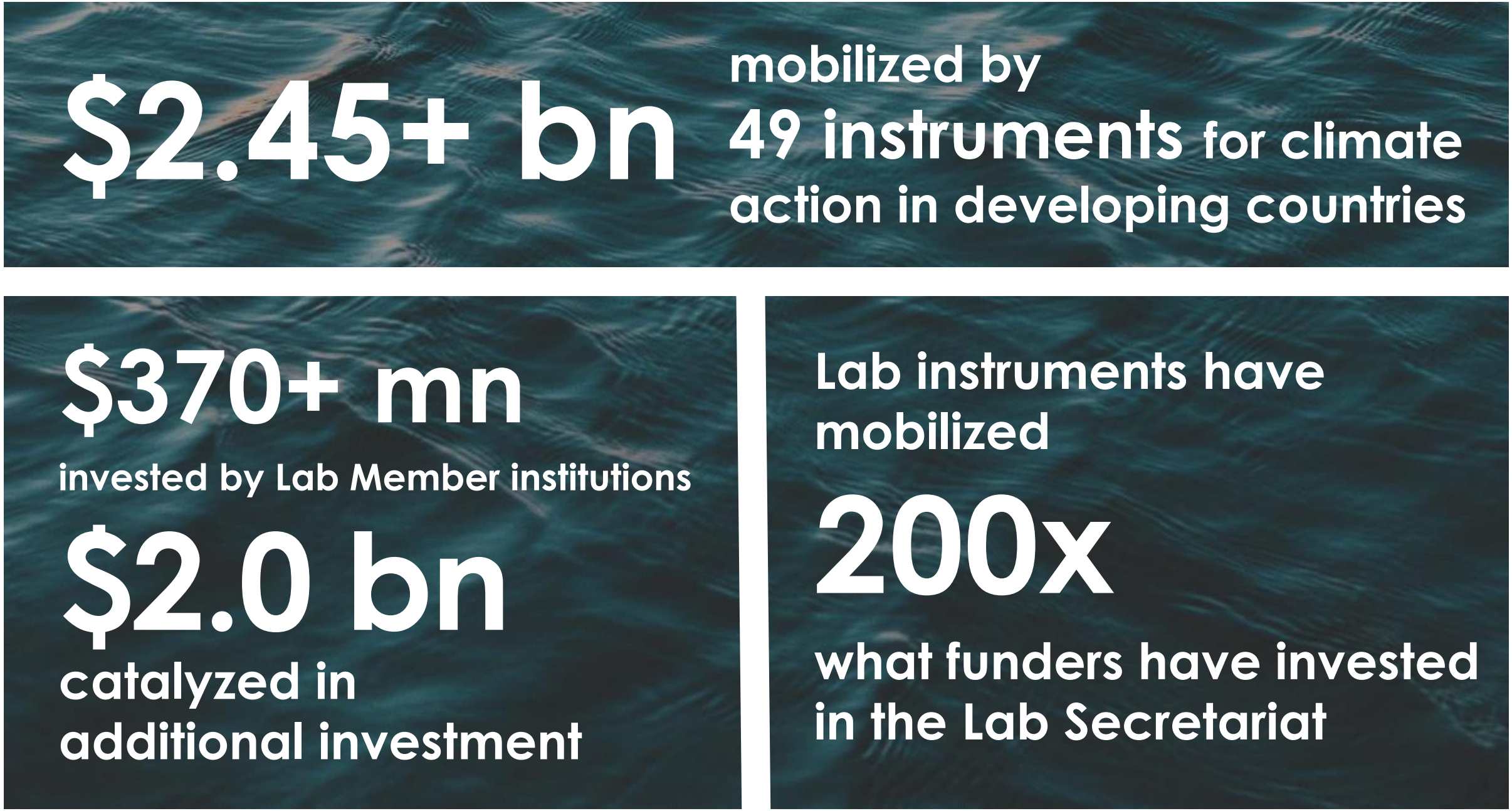
We work with a diverse range of partners whose decisions matter

The Lab identifies, develops, and launches innovative finance instruments that can drive billions in private investment to action on climate change and sustainable development.

49 instruments launched

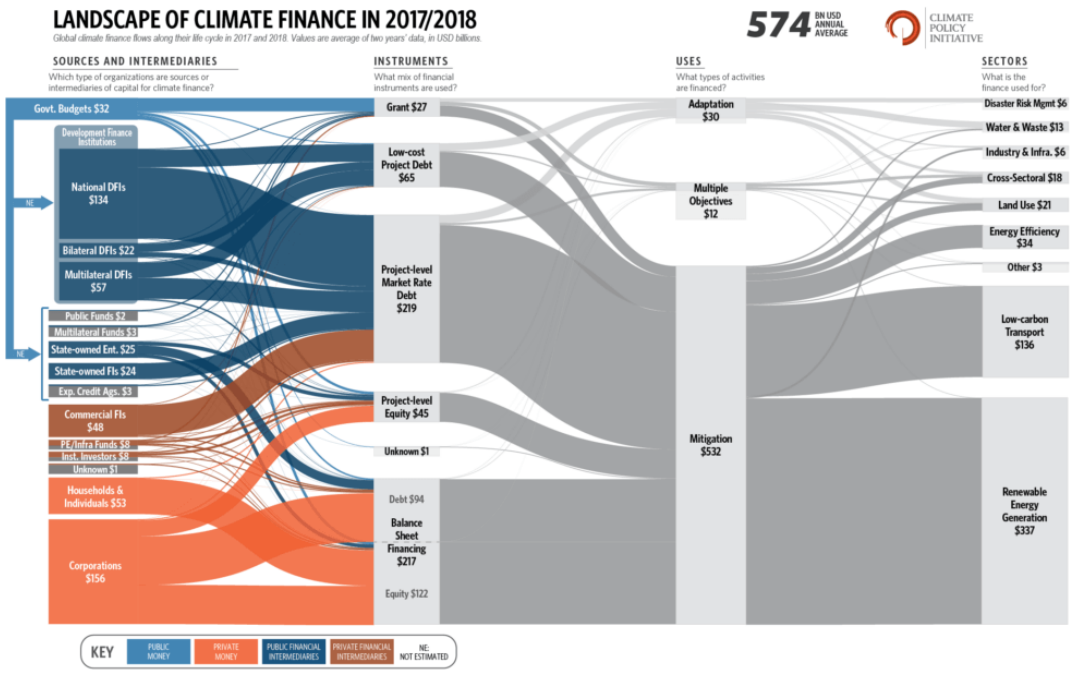
70+ public and private Lab Member institutions

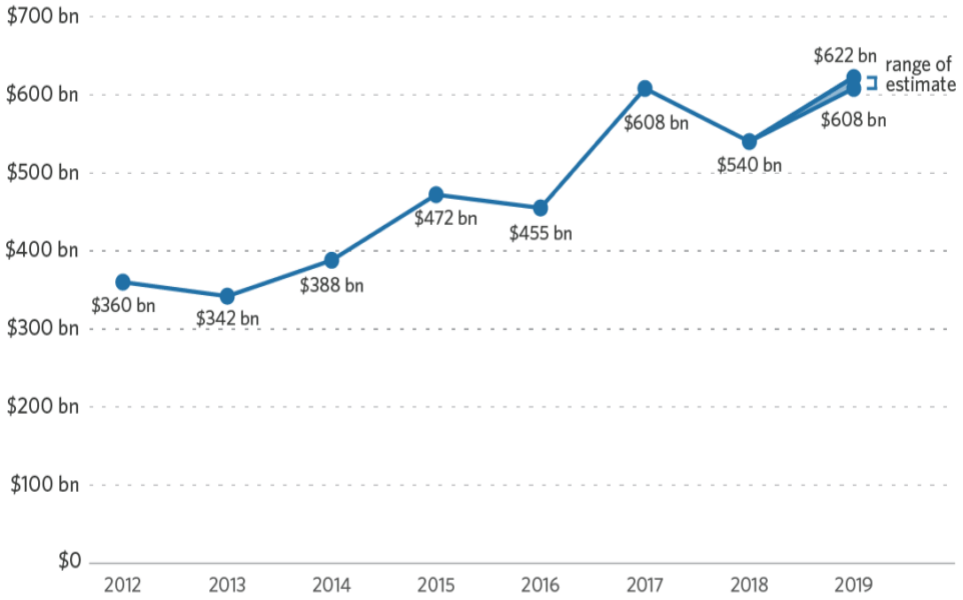
300+ supporting experts, nearly half from developing regions


$2.45+ bn
mobilized by
49 instruments for climate
action in developing countries
$370+ mn
invested by Lab Member institutions
$2.0 bn
catalyzed in
additional investment
Lab instruments have
mobilized
200x
what funders have invested
in the Lab Secretariat

Global Landscape of Climate Finance

While climate finance had been increasing, these figures represent a small share of the overall economic transition required to address climate change.

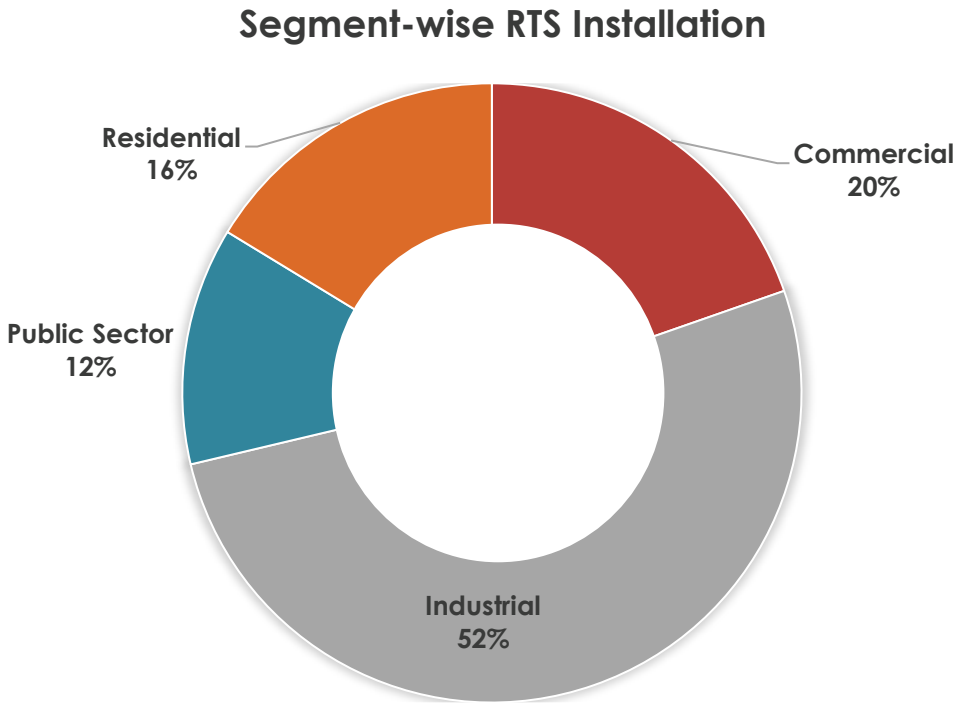




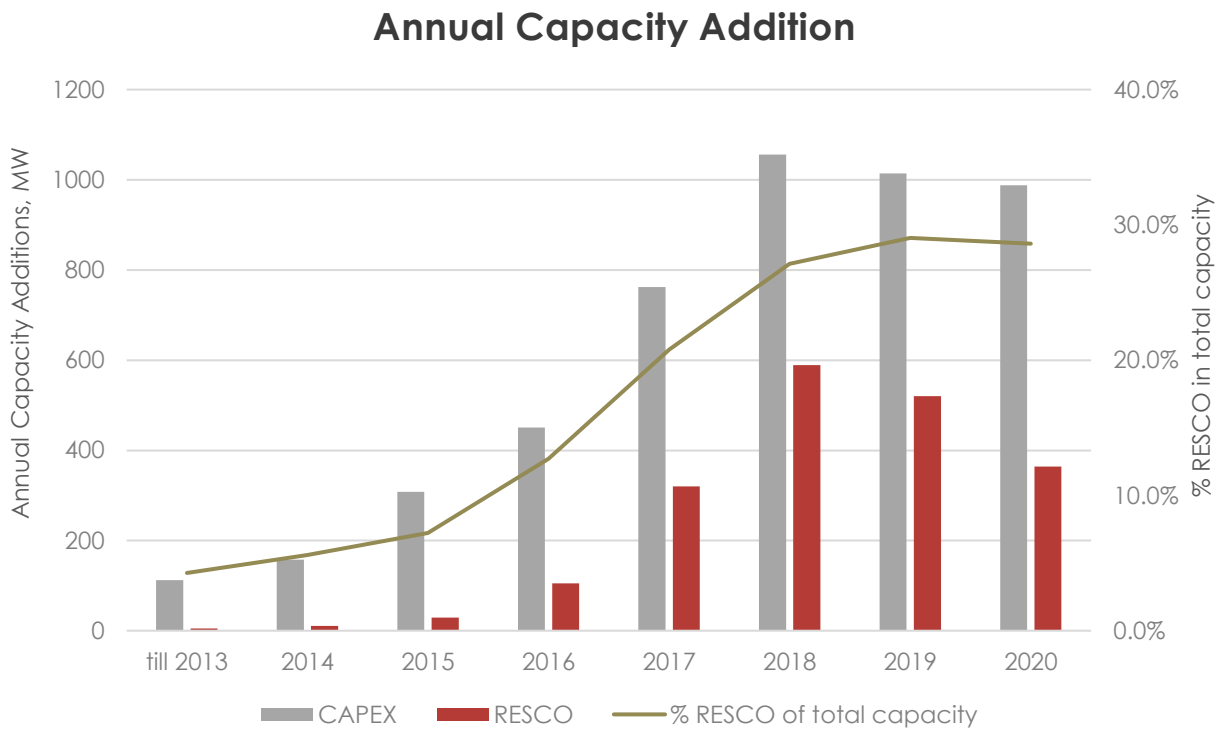
- The most comprehensive assessment of climate finance flow used at the UNFCCC, investors, and others
- Worldwide tracker of investment flows into projects, funds, institutions.

DRE initiatives in India

Rooftop Solar (RTS): Current Scenario



Source: Bridge To India



- Cumulative RTS capacity installation at ~6.7 GW, far behind the GoI target of 40 GW by 2022. C&I remains the biggest market segment with ~4.8 GW installed capacity

- Two key business models being implemented: a) CAPEX model and b) OPEX/RESCO model. Opex model has gained traction, currently at ~30% of the total installed capacity

Financing barriers that need focused solutions for scaling up RTS

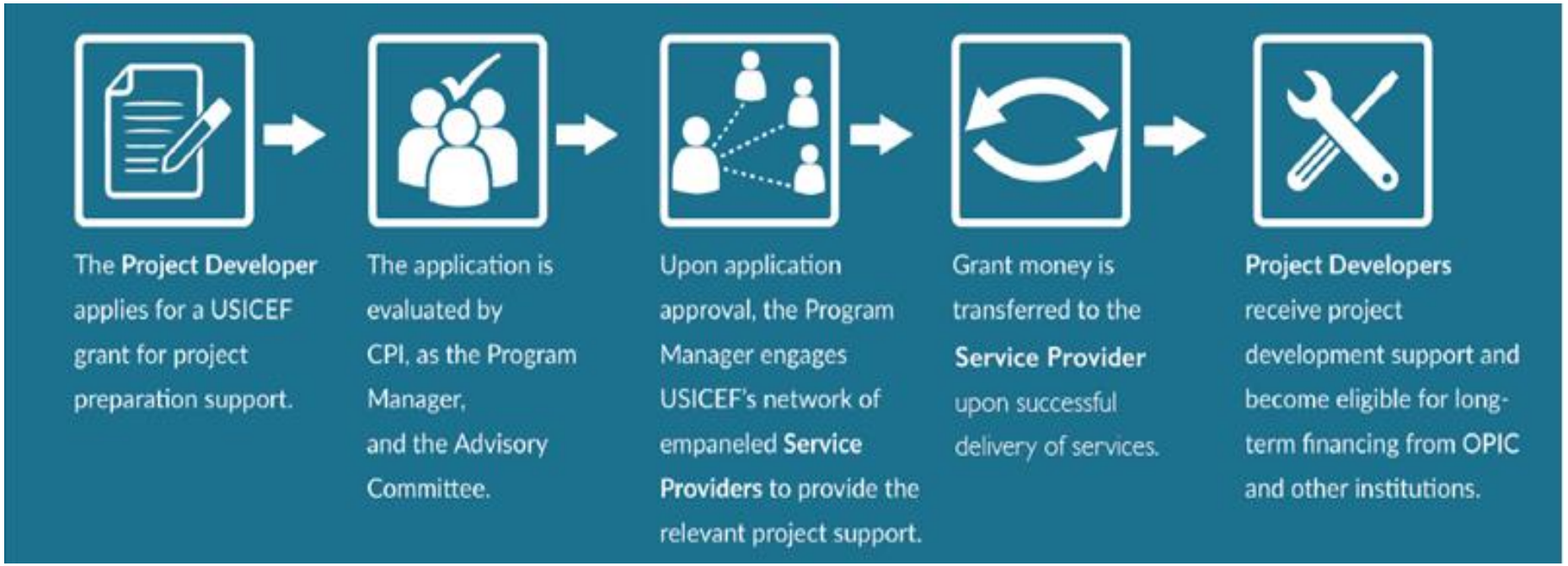
FINANCIAL BARRIERS	SOLUTIONS - MARKET NEEDS
• Limited information and validation on bankability and impact of business projects. • Small ticket size investments leading to high transaction costs • Lack of transaction structuring skills and legal robustness	Portfolio preparation support – legal, technical, commercial – **USICEF**
• Perceived credit risk/ credit quality of DRE projects • Execution abilities of DRE companies on proposed plans	Payment security mechanism/guarantee constructs **– Risk Mitigation – USICSF**
• Lack of balance sheet strength and the inability to meet standard lending conditions such as collateral, debt, service coverage ratio etc.	Project financing through venture debt characteristics – possible role of **Blended Finance**

WHAT IS USICEF & HOW DOES IT WORK?

USICEF- India's first distributed solar project preparatory facility

USD 20mn joint initiative between MNRE and US Foundations to scale up distributed solar power projects and drive long-term debt financing. **CPI is the Program Manager**

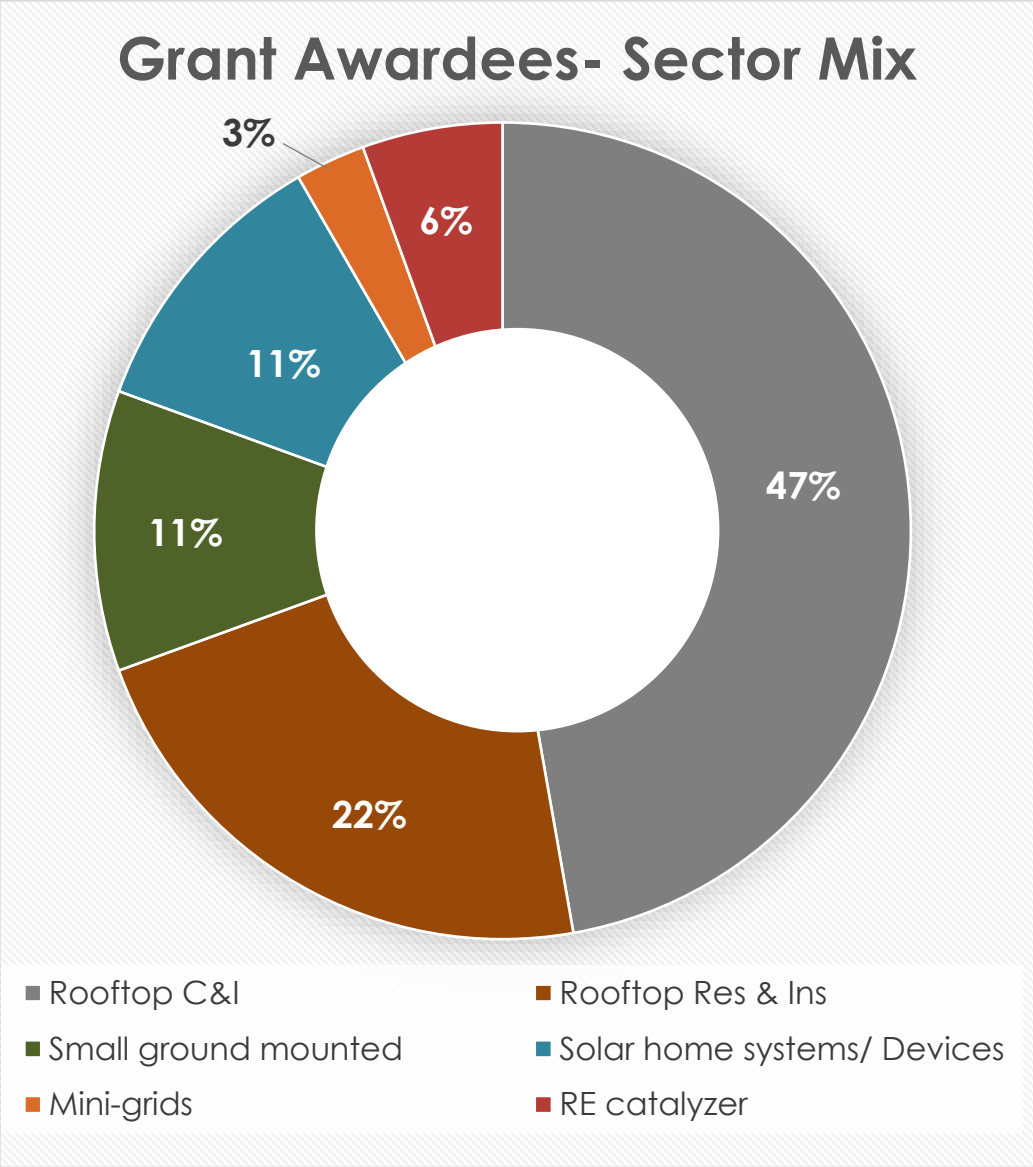
HOW IT WORKS



PROGRAM PARTNERS

Good Energies
William + Flora Hewlett Foundation
IndusInd Bank
IREDA
Jeremy and Hannelore Grantham Environmental Trust
MacArthur Foundation
Government of India Ministry of New and Renewable Energy
OPIC
PFS
the David & Lucile Packard Foundation
TATA CAPITAL

Grant Awardees Till Date



43 grant awardees announced in five rounds with an aggregate support of USD 5.9 mn

- **Round 1:** 3 grant awardees (USD 535,000) with estimated installation capacity of 45 MW and debt requirement of USD 38 mn
- **Round 2:** 10 grant awardees (USD 1.4 mn) with estimated installation capacity of 131 MW and debt requirement of USD 74 mn
- **Round 3:** 9 grant awardees in (USD 1.05 mn) with estimated installation capacity of 122 MW and debt requirement of USD 63 mn
- **Round 4:** 8 grant awardees in (USD 1.2 mn) with estimated installed capacity of 130 MW and debt requirement of USD 57 mn
- **Round 5:** 6 grant awardees (USD 0.9 mn) with estimated installed capacity of 78 MW and debt requirement of USD 35 mn
- **Round 6:** 7 grant awardees (USD 0.8 mn) with estimated installed capacity of 115 MW and debt requirement of USD 46 nm

Key Project Preparatory Activities that USICEF supports

- Credit Assessment Frameworks
- Technical feasibility/ Site Assessment studies/ EPC rating
- Legal support: contracts, structuring, loan documentation, opinion on policies/regulations
- Financial Advisory/ Commercial Feasibility/ Transaction structuring
- Market Assessment/ GTM strategy
- EHS/ ESIA studies

Debt Mobilization expected to reach USD 250M by end of 2021

60%

21 out of 36 supported developers, till round 5, have successfully mobilized debt using USICEF grants

210 Million

Over USD 210 million mobilized in debt from 15 different international and domestic lenders

Potential USICEF Impact

USD 5.9M
Grant support committed

615 MW
Capacity installation

830,000 MT P.A
CO2 emissions avoided

20,000
New jobs

885,000 MWh p.a
Electricity generated

USD 315M
Expected debt funding

In June 2020, we conducted a survey with 40 distributed solar rooftop companies and an overwhelming number of respondents found USICEF to be instrumental in their project development activities.

"The program has been tremendously beneficial to us and we wish the government to continue the same."

"The USICEF program was absolutely pivotal to our firm being able to successfully cross the bridge to transaction realization with international partners."

"Our experience so far has been extremely positive. The USICEF representative has been quite helpful, responsive to all our queries and has supported us well throughout the process."

"The program helps small players like us to access key sources of funds to help develop capabilities that can accelerate our journey to become mid-tier players."

"It is a lifeline for small companies. Extremely useful."

"The USICEF program is a wonderful program that helps address the gaps in the market for rooftop project development. Any form of credit guarantee mechanism would go a long way towards addressing the capital deficit that is plaguing the sector."

"The USICEF program is tremendously supportive and relevant to small and mid-sized players like us. We are able to actually get the right service providers to support, analyze and hand-hold the developer until project completion, and get the right financing in place."

Projects under USICEF benefit from the support of a robust USICEF network

MANISH CHOURASIA

Managing Director, TCCL

"For India's clean energy transition, distributed solar energy is critical. And USICEF plays a vital role in bridging the financial gap in the rooftop solar market in India. The TCCL team is extremely pleased to partner and support the many early -stage, promising solar projects through USICEF"

JOHN BALBACH

Director, Impact Investments, MacArthur

"USICEF is a great example of how an attentive, technical, and collective approach can identify and address some of the greatest financial challenges and market gaps faced by young, promising projects in the rooftop solar sector. We at MacArthur are proud to have supported and see the impact USICEF has already created in the space."

US-India Catalytic Solar Finance Program

Designs public-private interventions to support the government's 40GW distributed renewable energy target

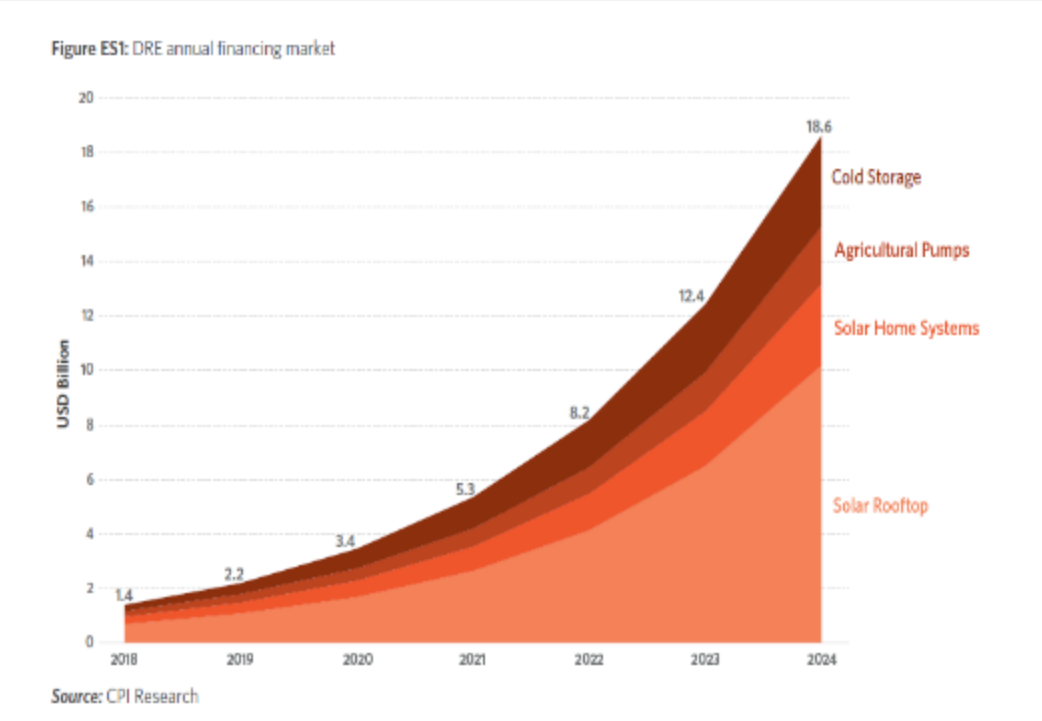
- **Credit Guarantee Mechanism *(now under implementation with the world bank through the ministry of MSME)*** - One million dollars of donor grant capital invested in the facility enables USD14 million of capital mobilization, and a capacity installation of 18 MW in the rooftop solar sector.
- **Transitional Foreign Exchange Debt Platform** - Each dollar of donor grant capital invested in the Platform enables USD17 to USD 34 of additional foreign debt into the solar rooftop sector

Key Findings: Future of DRE

A new CPI report outlines the benefits and market potential of India's DRE sector, examines the current policy and institutional landscape, and provides tailored recommendations for the different stakeholders.

Market Landscape

- To meet its sustainable energy targets, India will require annual DRE investment of USD 18 billion by 2024, a 10x increase from current levels
- Government focus has been on larger grid scale projects – Distributed Renewable Energy presents an alternative path to reach targets – if a more favorable regulatory & policy environment is created



- The RTS industry is largely fragmented, with only a few players reaching a pan-India scale – these are mostly early entrants that were either backed by Indian corporate or foreign private capital. Remaining players are largely local installers, executing work orders for the larger players.

- OGS market also remains small and fragmented, with limited interest from private capital and largely reliant on philanthropy or subsidized private funding.

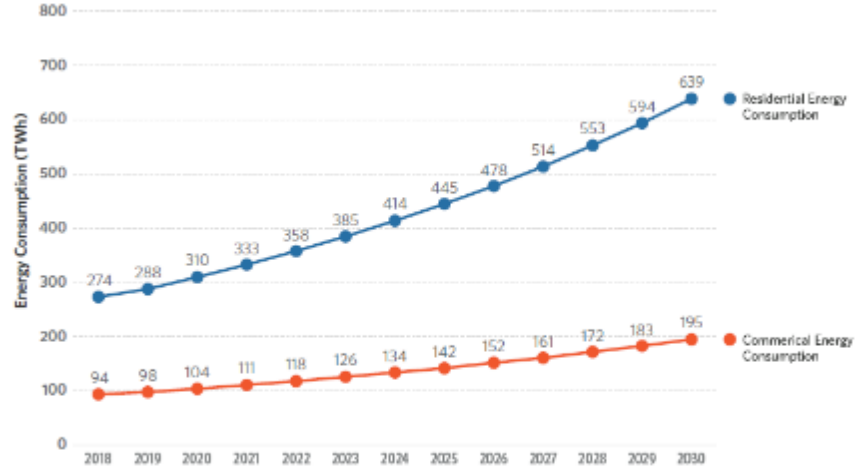
Key Challenges

- Smaller DRE developers lack the required capabilities to navigate the entire credit appraisal process of lenders.
- Information asymmetry, due to lack of project preparation and targeted transaction advisory.
- With competing demands for capital from mainstream business models, private capital owners view DRE as less financially attractive.
- Impact investors, along with commercial financial investors active in the space, tend to favor mature-stage companies and projects.
- DISCOMs are under significant financial stress due to operational inefficiencies, high AT&C losses, and artificially low prices for low-income residential and agricultural consumers.

Figure 5: Tariff structure in India

Source: CPI Research

Figure 7: Energy consumption in India



Source: Central Energy Authority (CEA), India Report

Recommendations

A rejuvenated policy framework that would both develop the private market for multiple downstream applications and maintain a meaningful role and revenue stream for DISCOMs.

- **Rooftop Solar –** A holistic demand aggregation model, which allows DISCOMs to get both a transaction fee for facilitating the installation as well as monthly fee for Operation & Maintenance (O&M) and billing/collection.

- **Distributed energy-storage –** A framework that is synergistic with rooftop solar policy and allows for incentives - capital subsidy for pilot projects, partnerships with private sector ESCOs, gross/net-metering benefits.

- **Charging Infrastructure –** DISCOMs as implementing agency for a franchise-based model. Allowing commercial establishments that produce excess rooftop solar power set up retail charging points.

- **Solar Cold Storage –** DISCOMs could facilitate commercial partnerships with solar pump installers and local farmer co-operatives under a RESCO model, allowing for export of excess power to the grid.

- **Productive Use Appliances –** Shift the focus from subsidizing product purchases (capital/equipment subsidies) to providing project development support (& technical assistance) to entrepreneurs developing the products.

Contact –

CPI: climatepolicyinitiative.org

The Lab: climatefinancelab.org

USICEF: usicef.org

Global Landscape of Climate Finance: climatefinancelandscape.org

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Thank You