

# Towards a new energy sector: The role of financial innovation

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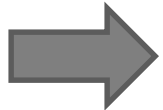
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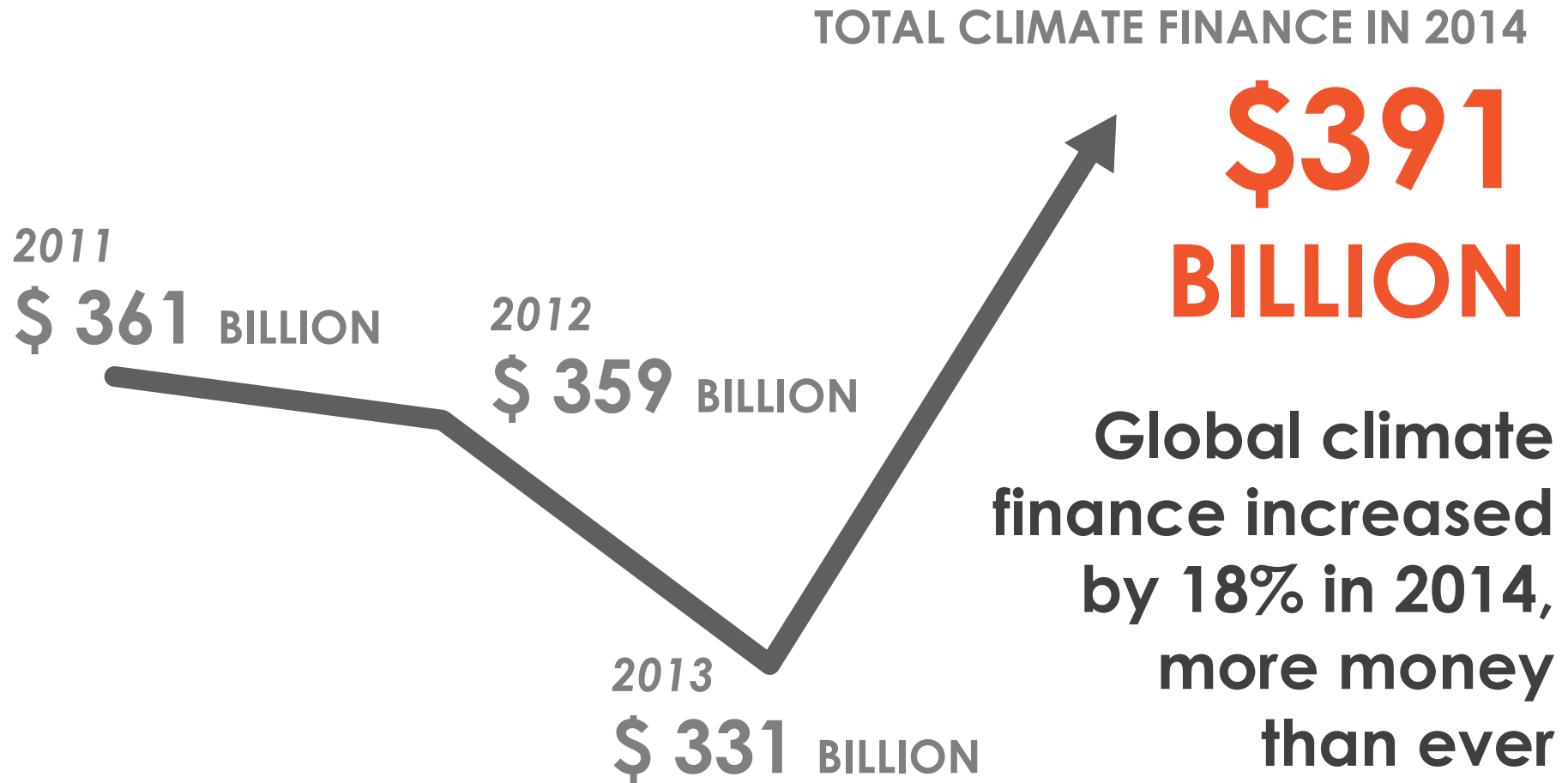
# Historic momentum: the Paris Agreement

- Goal of limiting temperature rise to 'below 2 degrees Celsius'
- Legal agreement for all nations from 2020
- Nationally determined contributions
- Ramp-up action every 5 years
- Continued finance/technology support, including \$100bn p/a commitment



**Innovation necessary to go beyond BAU**

# Total climate finance reached \$391 bn in 2014



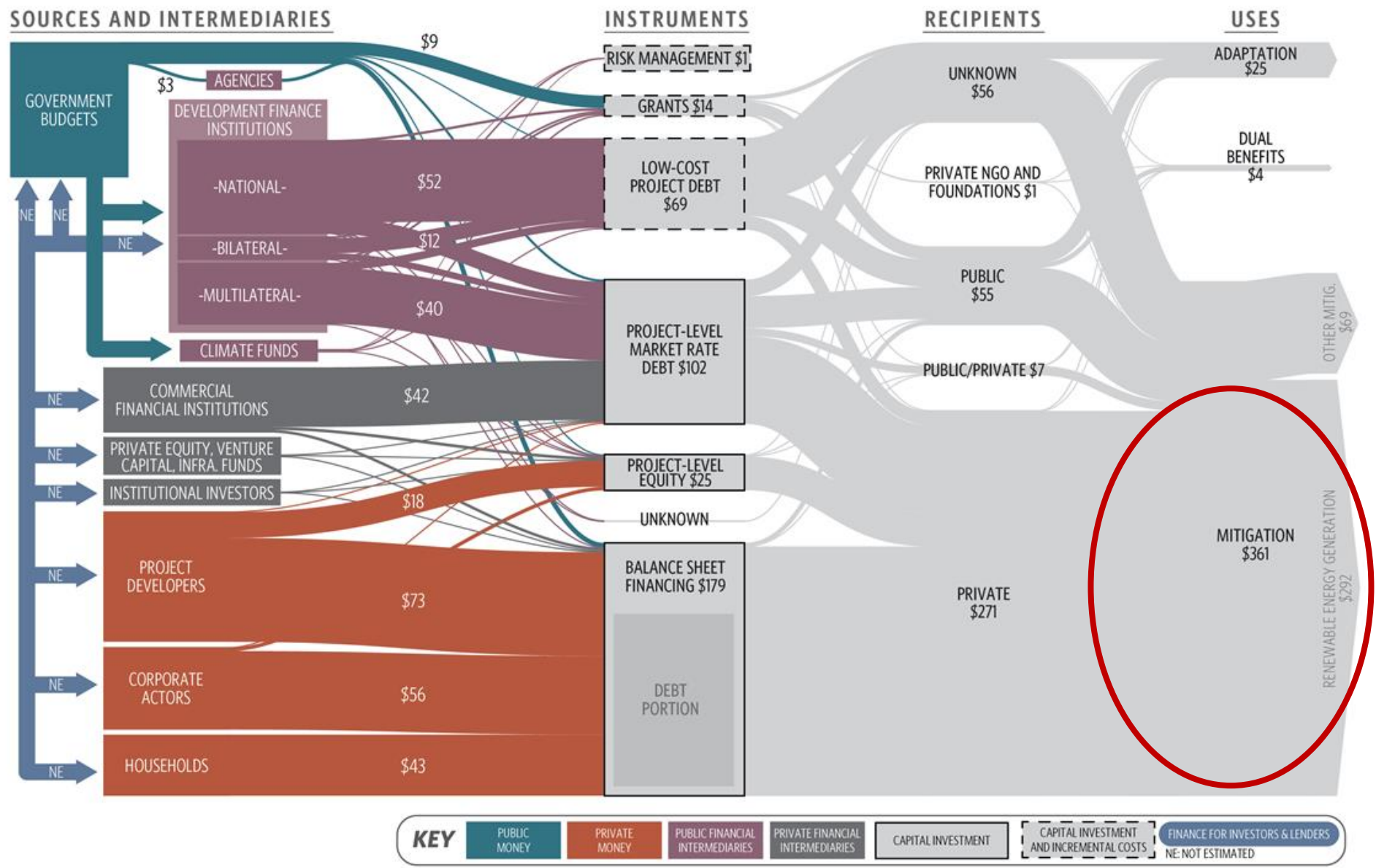
# GLOBAL LANDSCAPE OF CLIMATE FINANCE 2015

Landscape of Climate Finance 2015 illustrates climate finance flows along their life cycle for the latest year available, mostly 2014, in USD billions

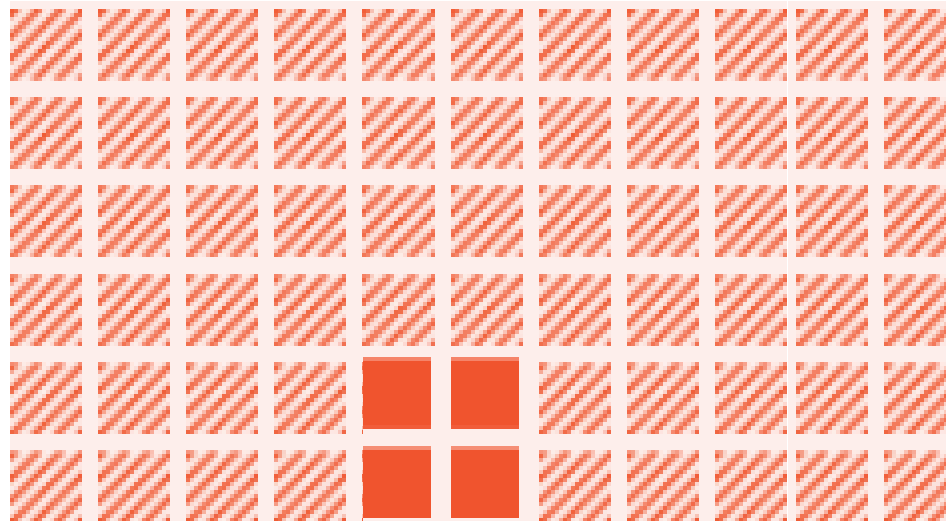
## USD 391BN TOTAL



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# The pathway to 2 degrees...



	<p><b>&gt; \$1 TRILLION</b></p> <p><b>\$ 16.5 TRILLION</b></p> <p>Invested in 2011 – 2014</p> <p>Investment needed 2015 – 2030 to</p> <p>limit temperature increase to 2°C**</p> <p>in renewable energy and energy efficiency*</p>	
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Source: \*IEA

The problem is not lack of capital

Around **US\$90 trillion** is likely to be invested in infrastructure in the world's urban, land use and energy systems in the next 15 years

# Several barriers affect investors' incentives and ability to invest in new technologies

## Policy gaps

- Inadequate regulatory frameworks
- Retrospective policy changes

## Knowledge gaps

- Investment opportunities
- Pricing of climate change risks

## Risk, viability & funding gaps

- Perceived risks
- Return uncertainty
- Inadequate access to finance

➤ **Barriers vary by type of private actor, region, sector, technology & level of climate exposure**

# Financial tools can help public actors address risks and gaps to unlock private investment

- Incorporating **concessional finance** without crowding out private investment
- **De-risking investments** by providing guarantees, insurance or hedging instruments
- Supporting **project preparation** and overcoming the 'valley of death'



...this in turn can reduce technology costs



# Tools already exist to unlock investment

**Guarantees**

**Insurance**

**Structured  
funds**

**Export  
credits**

**Currency  
hedging**

**Aggregation  
platforms**

**Project  
prep  
facilities**

# So why do we need innovation?

- Non traditional development tools
- New sectors and new geographies; need to boost investor confidence
- Complex or time consuming process to access public finance and slow decision making processes

# Unlocking innovation: The Lab & Fire Awards

**The Global Innovation Lab for Climate Finance** supports the identification and piloting of cutting edge climate finance instruments. It aims to drive billions of dollars of private investment into climate change mitigation and adaptation in developing countries.

**The Fire Awards** support the identification and expansion of powerful, early stage businesses and interventions to accelerate finance for clean energy and green growth.



# A public-private partnership to promote innovation



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AFRICAN DEVELOPMENT  
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UTILITIES AND CLIMATE



Department  
of Energy &  
Climate Change

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FMO



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Environment, Nature Conservation,  
Building and Nuclear Safety



**masen**  
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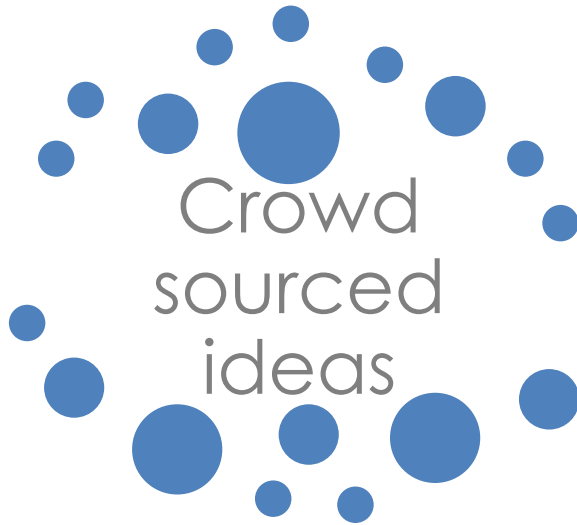


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# Developing opportunities and delivering innovation



# Developing opportunities and delivering innovation



**Crowd sourcing ideas** can reveal where the private sector experiences or perceives viability and risk gaps and helps to highlight priorities for innovation.

# Developing opportunities and delivering innovation



A **Public-Private dialogue** is key to identify investment barriers, raise awareness of opportunities for collaboration and support tailored solutions to reduce costs and risks.

# Developing opportunities and delivering innovation

## **Impact on the ground: Mobilisation and replication**

- G7 Endorsement
- US\$600M+ in new funding raised for pilots in Latin America and Africa.
- Lab model successfully replicated through the India Lab, and the Fire Awards.



Innovative  
finance  
tools



# Lab instruments – renewables & energy efficiency

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## Energy Efficiency Enabling Initiative

- Proposed by the Inter-American Development Bank
- Will mobilize equity finance and deploy technical assistance for energy efficiency in developing countries.
- USD 5 million in seed funding from IDB

## Energy Savings Insurance

- Inter-American Development Bank with support from Danish government
- USD 47.5 million pilot launched in Mexico;
- USD 21.7 million from the Green Climate Fund for El Salvador expansion

## Climate Investor One (\*CDFF)

- FMO, the Netherland Development Finance Company & Climate Fund Managers
- USD 400 million in funding commitments
- Large-scale solar-hydro projects set for development in Rwanda & Zambia

## Long-term Foreign Exchange Risk Management

- EUR 30 million commitment from German government to TCX for hedging instruments in Sub-Saharan Africa
- USD 52 million in climate-related hedging transactions since December 2015

## **Loans4SMEs**

- Peer-to-peer lending platform to help small and medium enterprises operating in renewable energy and energy efficiency raise debt finance
- Potential to mobilize \$2.20 billion of debt to the SME sector for renewable energy and energy efficiency initiatives by 2022

## **P50 Risk Solutions**

- A facility to reduce the cost of long-term debt for renewable energy projects by transferring resource risk from banks to insurers through a blending of commercial and donor capital
- Potential to support 591 MW of additional wind power

## **Rooftop Solar Financing Facility**

- Financing facility to provide long debt financing at a reasonable rate to rooftop solar developers through aggregation of loan pools and securitization
- Potential to mobilize USD \$32.3 billion of capital to the rooftop solar sector, and create an additional 20,000 jobs by 2022 .

## **FX Hedging Facility**

- A customizable currency hedging product that lowers currency hedging cost, allowing allocation of risks to suitable parties and eliminating the credit risk premium
- Potential to mobilize \$28 and \$38 of private foreign debt and equity investment respectively per dollar of donor finance

# Towards a new energy system

**Incubator or accelerator initiatives** can support the piloting and implementation of innovative green finance solutions:

- Stress testing
- Increased understanding of barriers
- Increased profile and visibility
- Networks and access to funders

# Thank you!



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# Back-up slides



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# Lab Program Criteria

- **Actionable**

Implementable in a few years without facing major barriers, and identify a clear strategy and necessary partnerships to do so.

- **Innovative**

Addresses risk, cost, and liquidity barriers through a new or enhanced approach or set of tools.

- **Catalytic**

Has potential to mobilize private climate capital at scale, and offer clear socioeconomic, development and environmental impacts.

- **Financially Sustainable**

Identifies a strategy for phasing out of public financial support, thereby achieving market viability .



# Climate Investor One

## Overview

Facilitates early-stage development, construction financing, and refinancing to fast-track renewable energy projects in developing countries

## Key features

- **FMO, in partnership with Phoenix InfraWorks from South Africa**
- **9 projects to deploy 300 MW and mobilize USD \$2 bn in private finance**
- **EUR 50 mn commitment from the Dutch government, and USD \$450 mn in strong interest**
- **Large-scale solar and hydro projects set for development in Rwanda and Zambia**

## Details

**Cycle:** 2014 - 2015

**Type:** Mitigation

**Sector:** Renewable Energy

**Stage:** In Action

**Status:** Endorsed

**Goal:** Promote development and finance of climate mitigation projects in developing countries.

**Geography:** In pilot phase: Rwanda, Uganda, Kenya, Nigeria, Ghana, Indonesia, Philippines, India, Nepal, Nicaragua, Guatemala, Costa Rica, Panama. In the future: Low-income and lower middle-income countries

**Implementing Entities:** Renewal Fund Managers, a joint venture between FMO and Phoenix InfraWorks

**Private Finance Target:** Project developers, private equity funds, infrastructure equity and debt fund investors



# Long Term FX Risk Management

## Overview

Provides tools to address currency and interest rate risk for climate relevant projects in developing countries

## Key features

- Could support USD \$1.5 bn of clean investment projects
- TCX and IFC (International Finance Corporation) are the implementing agencies with the aim to mobilize up to USD \$3.5 billion
- EUR 30 mn commitment from German government for Sub-Saharan Africa
- USD 52 mn in hedging transactions completed under SE4All since Dec 2015

## Details

**Cycle:** 2014 - 2015

**Type:** Mitigation

**Sector:** Renewable Energy, Other

**Stage:** In Action

**Status:** Endorsed

**Goal:** Increase low-carbon investment in developing countries by providing foreign exchange and interest rate risk management instruments to projects and entities investing in climate relevant sectors.

**Geography:** Global

**Implementing Entities:** The Currency Exchange Fund (TCX) and the International Finance Corporation (IFC).

**Private Finance Target:** Private debt and equity



# Affordable Green Homes

## Overview

Replication of IHS's existing fund model, which leverages 'catalytic' capital to lower the cost of capital of the fund, enabling it to (1) pay for the additional costs to green homes under construction and (2) deliver required returns to commercial investors in its fund

## Key features

**Long-term goal to catalyze a market for affordable green homes in Sub-Saharan Africa**

- **IFC EDGE Standard (>20% improvement above market norms in energy, water and embodied energy in building materials)**
- **Target commercial return: 20%**
- **Target catalytic return: 12%**
- **Currently being piloted in South Africa**

## Details

**Cycle** 2015 – 2016

**Champion** Cathal Conaty,  
International Housing  
Solutions

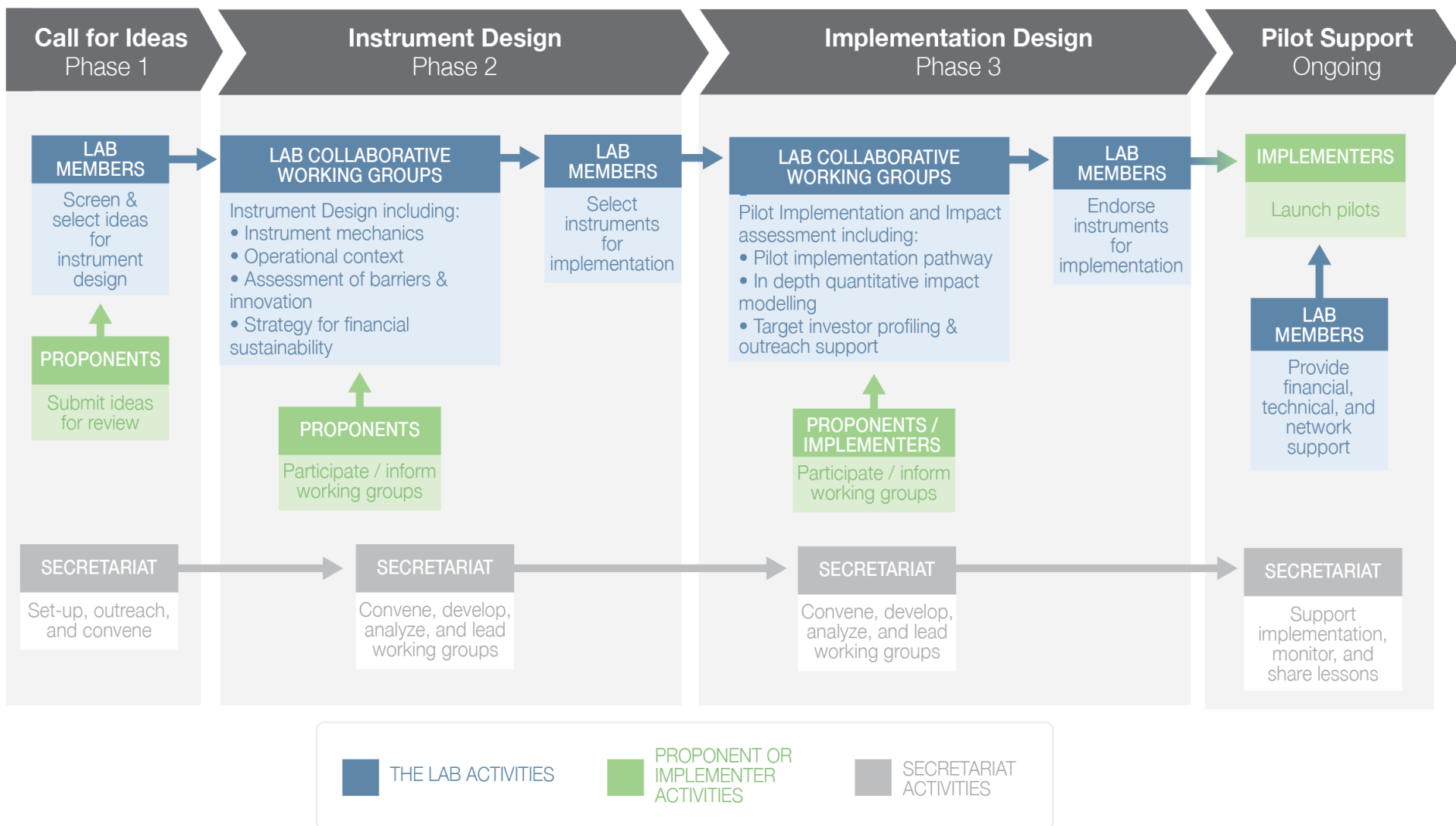
**Sector** Energy efficient  
housing

**Geography** Sub-Saharan  
Africa

**Goal** To catalyze a market for  
affordable green homes in  
SSA

**Stage** Post-pilot

**Target finance** Institutional  
investors in PE and real  
estate



The **Fire Awards** build momentum for powerful, early-stage interventions and businesses that can **accelerate** finance for **clean energy and green growth**.

In April, over 1,000 energy-sector and finance leaders at the BNEF Future of Energy Summit voted for the top ideas from out of eight vetted finalists in a competitive pitch process. **The 2016 Fire Award winners are:**

### **AFFORDABLE GREEN HOMES**

**Champion** Cathal Conaty, International Housing Solutions

*Key Metric – Current green homes delivered: 5,060, Target >10,000*

### **DEVELOPING HARMONIZED METRICS FOR PAYG SOLAR INDUSTRY**

**Champion** Anna Lerner, Energy & ICT Specialist, The World Bank Group

*Key Metric – Potential scale of intervention: \$5bn in 2020*

### **GLOBAL RENEWABLE INDEPENDENT POWER SUPPLIER (Grips)**

**Champion** Alexander Voigt, CEO, Grips Energy AG

*Key Metric – Market potential: >150 GW with 5% p.a. growth*

### **INVESTOR CONFIDENCE PROJECT**

**Champion** Andy Darrell, Chief of Strategy, Global Energy & Finance, Environmental Defense Fund

*Key Metric – Current market size: >100 million buildings, Potential >\$1 trillion*