

Financing Green Housing – build a better future and differentiate from your competitors

IFC's solutions in housing finance to mitigate the impact of climate change



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Why going Green in construction and finance? – Changing customer preferences and conditions in the environment and legislation



Rising urbanization and
growing population in India

Strain on infrastructure

Rising pollution

“Smart city initiative of Indian Government”

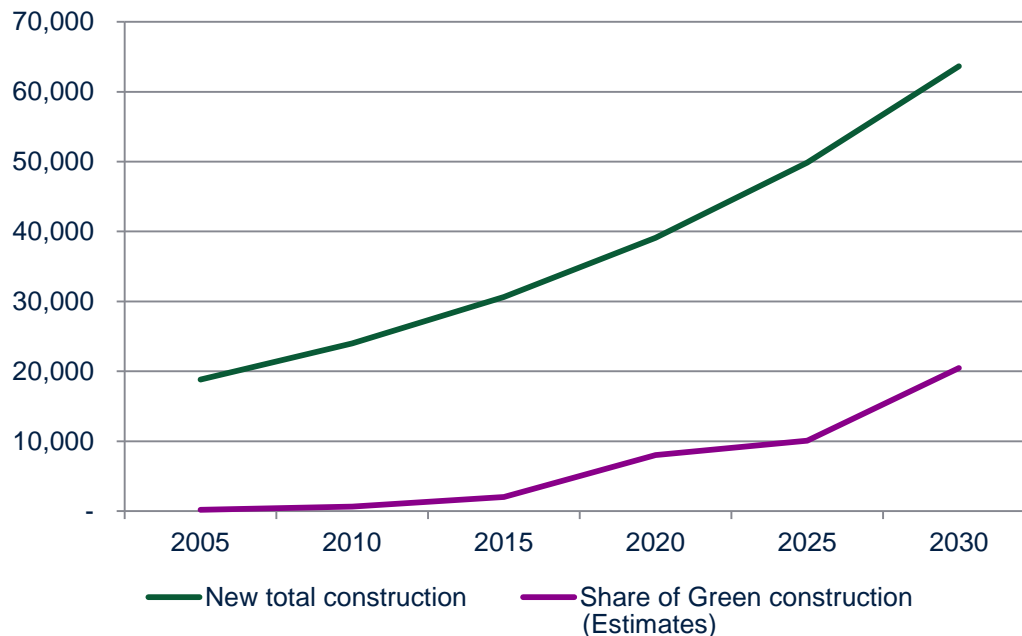
Deteriorating health

Changes in legislation

Changing consumer patterns in housing provide opportunities for developers and lenders

Rising share of Green buildings in relation to total construction volume (estimated at US\$ 15 billion by 2018)

Housing growth in India (in '000 sqf)



Rising housing cost provide an incentive for households to consider green housing options

- Rising consumption of energy
- Increased cost for water
- Increased demand for more spacious living areas
- Higher cost for commuting

Source: IGBV, IFC, Planning Commission

Key Players



Building users



Developers/Construction industry

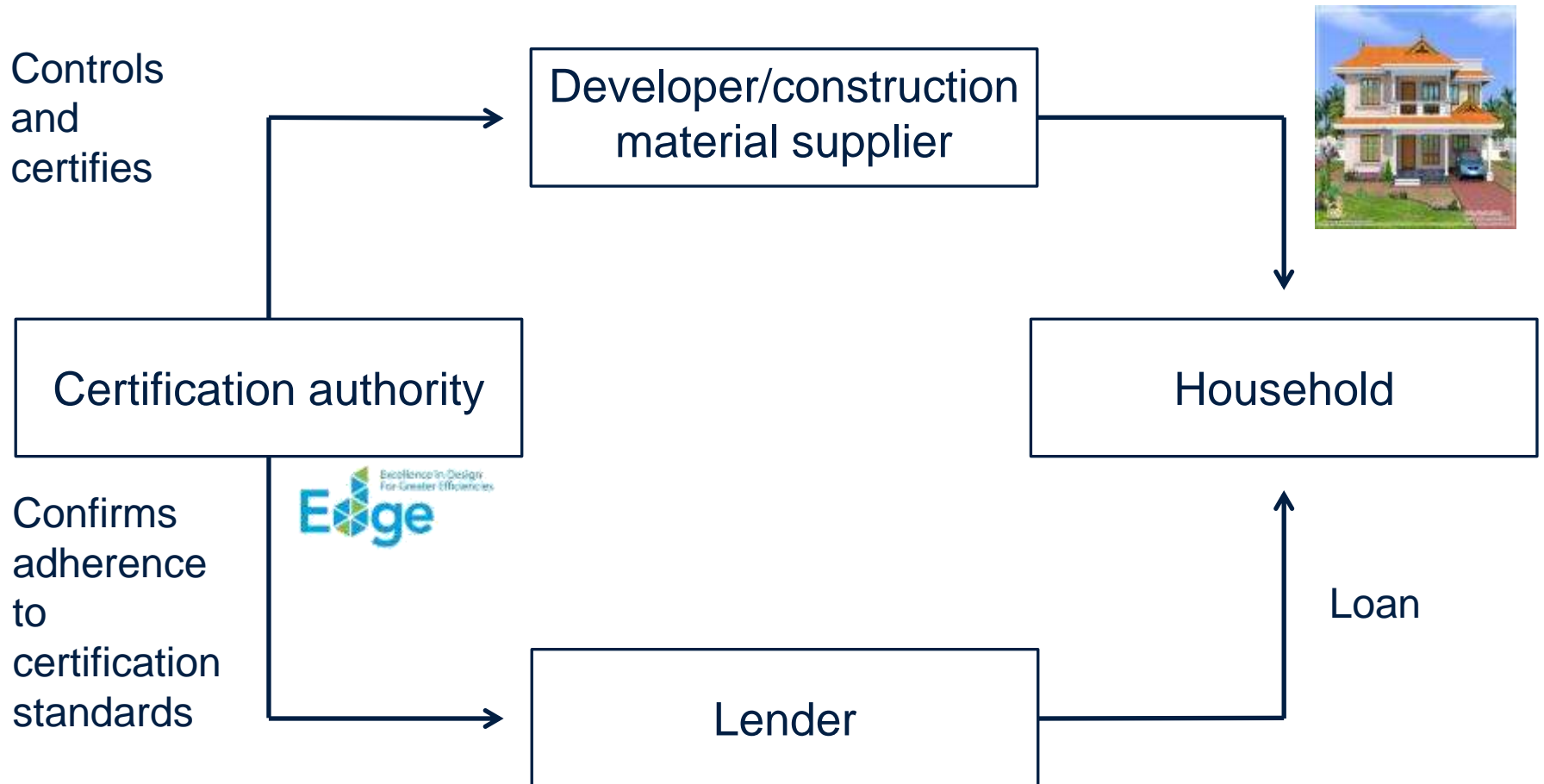


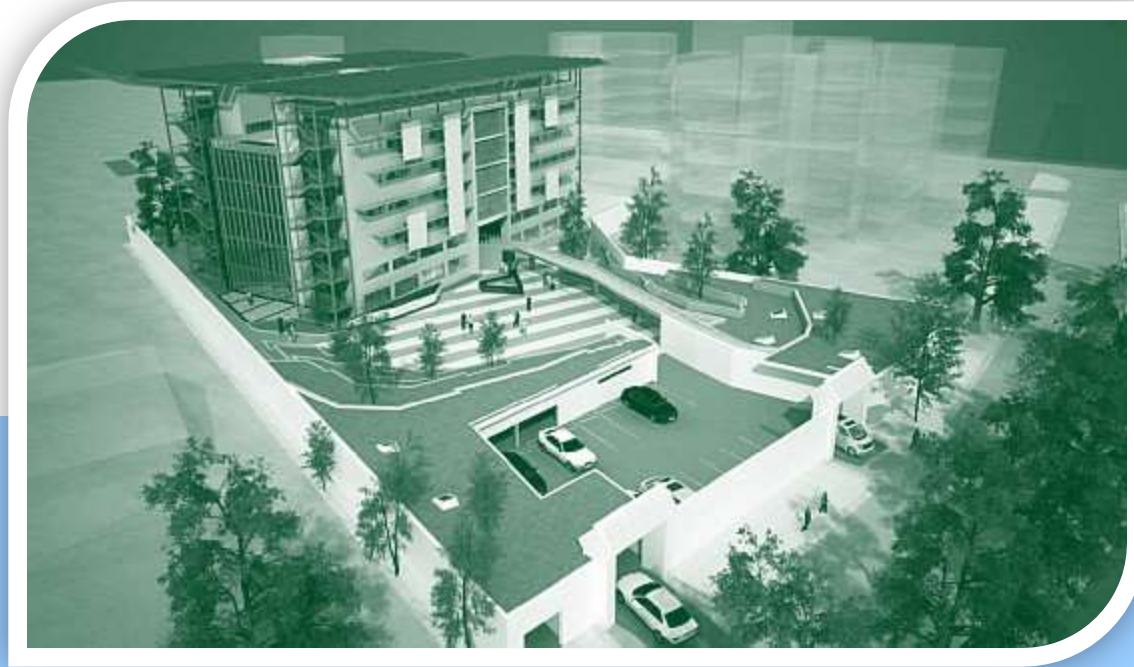
Banks



Material suppliers

Typical project design to create market for Green Mortgages in India





How to benefit from these opportunities? Developer's and builder's perspective

Are Green homes more economical than conventional homes?



YES!

Because:

- Water consumption: 40% less (source: IGBC)
- 20 – 40% savings on operations costs, including electricity (source: IFC)
- Higher resale value: 10 – 14% (data from UK, USA)
- Enhanced quality of life
- Less costly to build than perceived



Green Homes typically have



Roof and wall insulation



Low environmental impact building materials [embodied energy]



Water efficient fittings and rain water collection



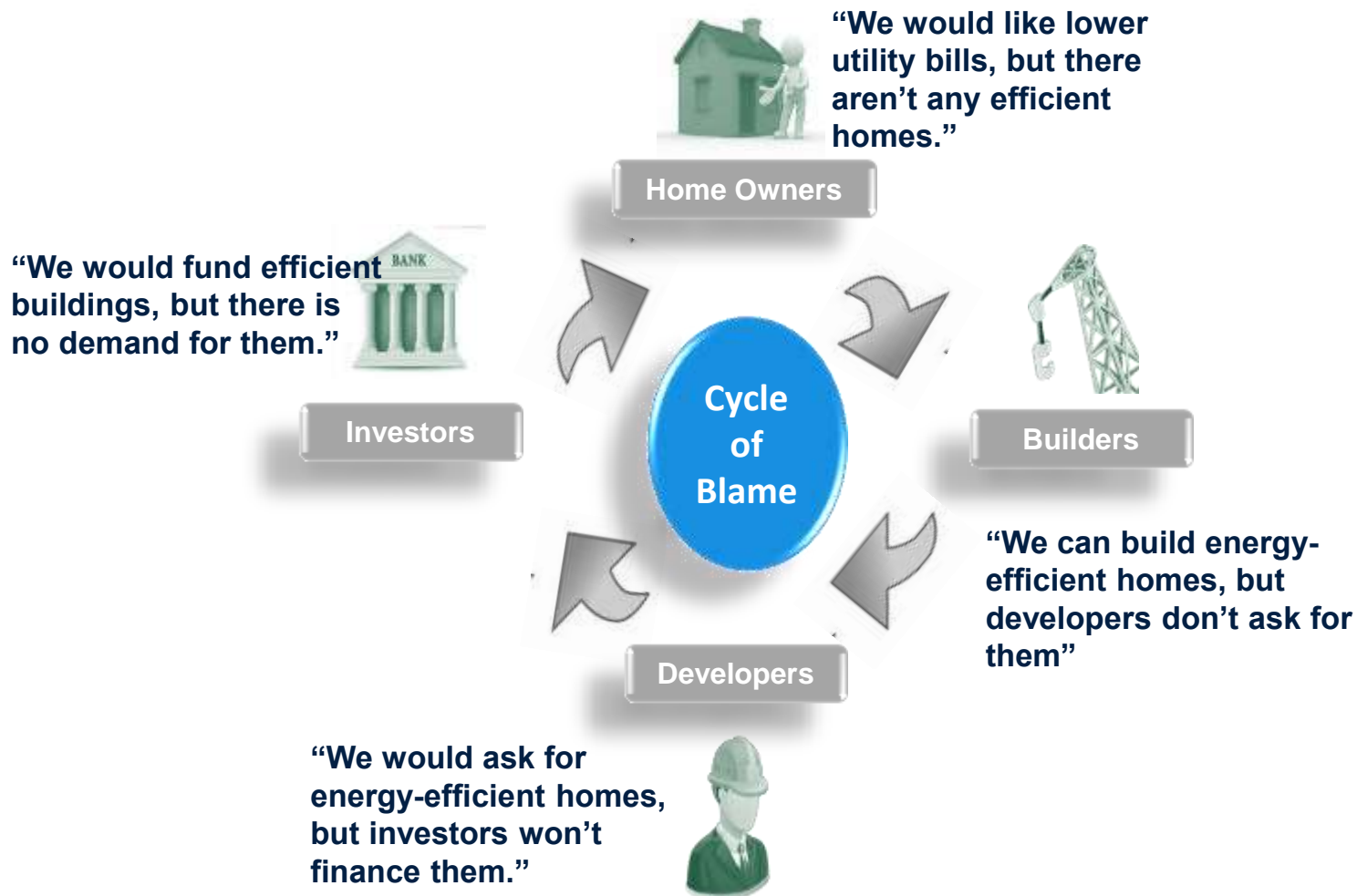
Smart meters for better control and metering



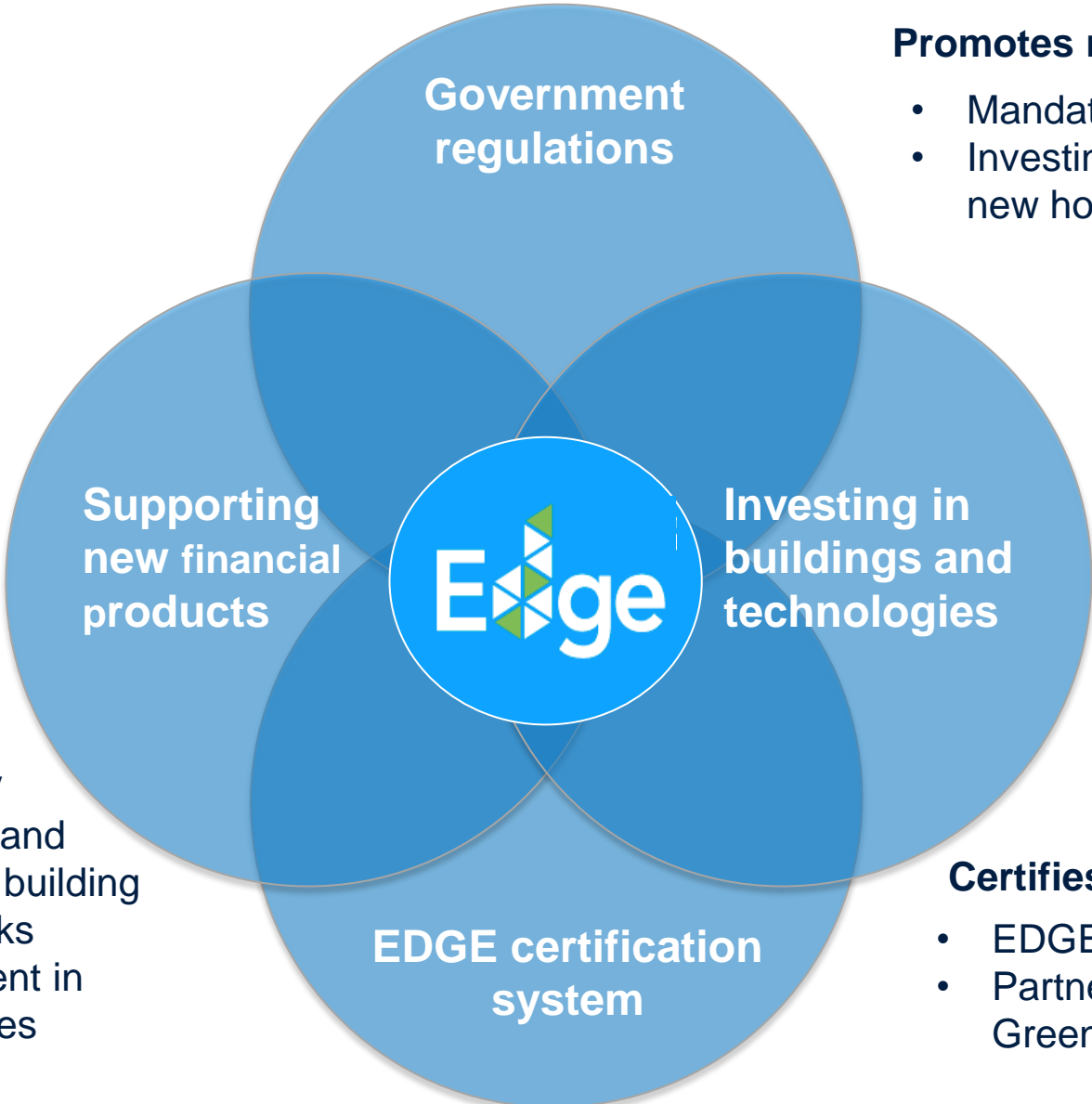
Solar hot water heaters

- Energy efficient appliances
- Modernization of cooling systems
- Solar electricity using photovoltaics
- Energy efficient ceiling fans and lighting
- Passive design features for thermal comfort
- Energy efficient appliances

Why aren't Green homes more common?



IFC's Efforts to break cycle



Promotes new Green stock

- Mandatory building codes
- Investing in construction of new homes

Create business opportunity

- Training and capacity building with banks
- Investment in credit lines

Certifies Green stock

- EDGE certification system
- Partnerships with local Green Building Council



IFC's EDGE System

EDGE Resource Efficiency Rating

- EDGE stands for “**Excellence in Design for Greater Efficiencies.**”
- Designed for emerging markets.
- Reveals technical solutions for going green and captures capital costs and projected operational savings.

Who uses EDGE?

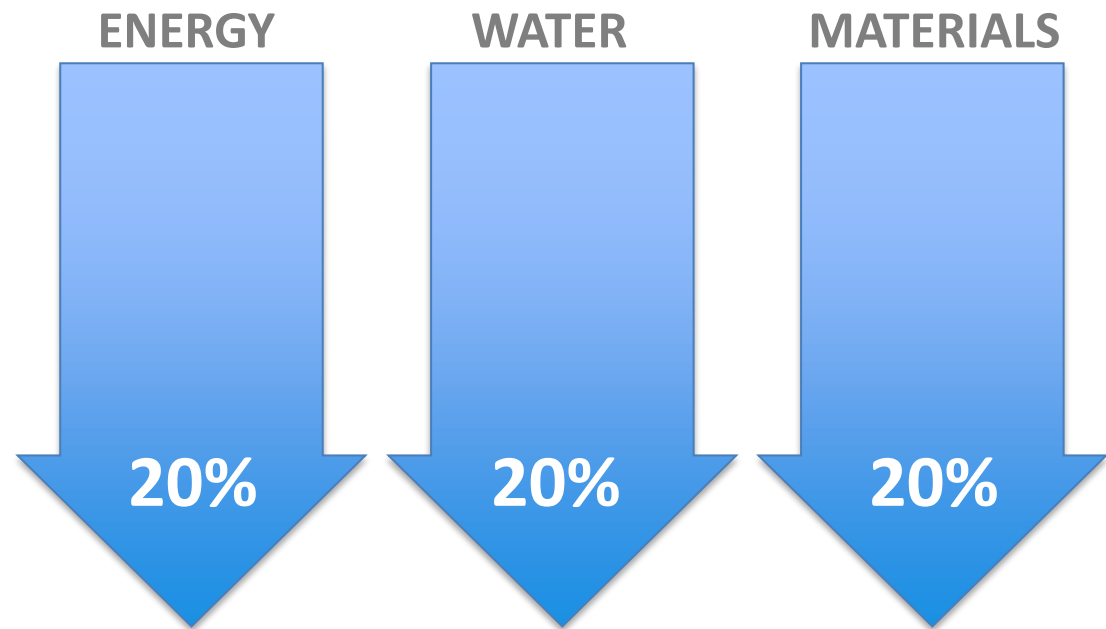
- **Investors** – to test the financial viability of a green building project.
- **Banks** – to offer green mortgages and green construction credit facility.
- **Developers** – to brand their projects ‘green’ and attract investors and buyers.
- **Building Owners** – to save on operational costs



What is the EDGE standard?

‘A greenfield building that has 20% less energy, water and material consumption compared to an equivalent local benchmark.’

The standard provides a performance assurance to buyers and investors.



The EDGE Tools

- EDGE has contextual data of utility costs and climate for different cities
- EDGE uses building physic calculations to give design-specific results
- EDGE spells out the most effective technical measures
- EDGE provides an investment planning tool for building owners and developers

The screenshot displays the EDGE tool interface. At the top, it features the 'Edge Homes' logo and the IFC (International Finance Corporation) logo. Below the header, there are two main sections: 'Type and Location Data' and 'Energy Efficiency Measures'.

Type and Location Data: This section includes input fields for 'Country', 'City', 'Type of Building', and 'Type of Home (Class)'. It also has checkboxes for 'Use original house - Not' and 'Use more detail'. On the right, there are input fields for 'Operational CO2', 'Embodied CO2', and 'Estimated Utility Cost', with corresponding units like 'kgCO2/year' and 'kgCO2'.

Energy Efficiency Measures: This section lists various measures with checkboxes, such as 'Automatic controls for all windows & air conditioning', 'Low energy lighting (20, 120-75 Light)', 'Airflows with windows for sufficient daylight', 'Roof insulation', 'Wall insulation', 'Insulated roof and wall joints', 'Corner insulation', 'Curtain bars in all windows', 'External solar shading', 'Moist thermal mass in wall/ceiling/floor', 'Low E coating on glazing', 'Double glassed windows', 'E5 refrigerant', 'E5 gas water heating', 'Use conditioning loads for space heating', and 'Solar water heating'. Below the list are input fields for 'Annual saving' and 'Total saving (incl. embodi)'.

Energy kWh/m2/year: A bar chart showing energy consumption in kWh/m2/year. The chart compares 'Reference house' and 'EDGE house (not certified)'. The 'Reference house' bar is significantly higher than the 'EDGE house' bar, indicating lower energy consumption for the EDGE house. The legend includes categories like 'Cooling heating', 'Cooling heating', 'Other appliances', 'HVAC system', 'Cooling', 'Water heating', and 'Lighting'.

Location & Climate: At the bottom, there are input fields for 'Country' and 'City', and a world map graphic.

Available for free at www.ifc.org/edge

The EDGE Tools: Energy efficiency section



RESULTS	Final Energy Use	257	kWh/Month	Operational CO2 Savings	0.2	tCO2/year	Base case utility costs	55.6	\$/month
	Final Water Use	21	m3/Month	Embodied CO2 Savings	-	tCO2	Utility costs reduction	13.1	\$/month

Energy Efficiency Measures

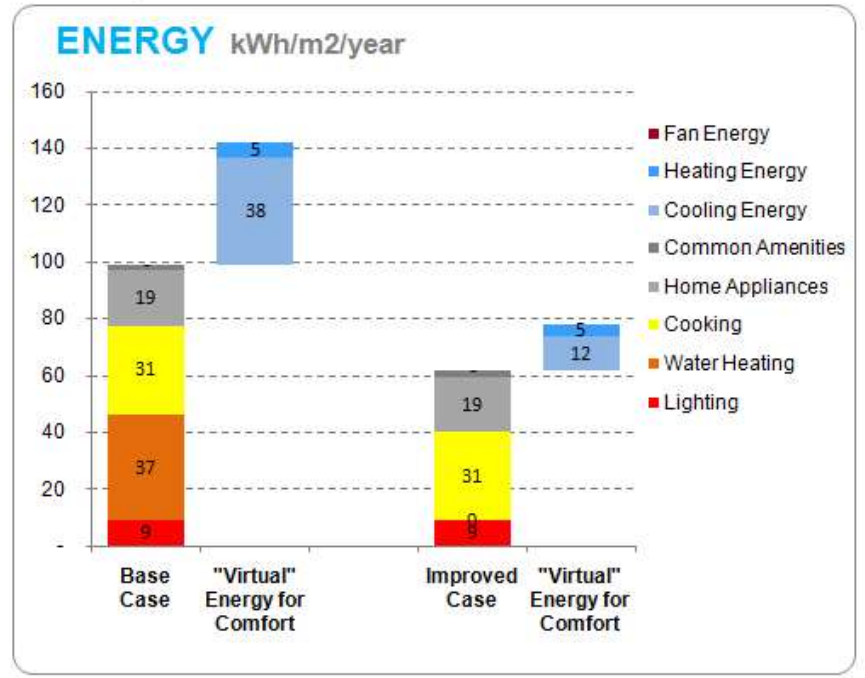
Select option from the list below

- Reflective Paint/Tiles for Roof
- Reflective Paint for External Wall
- External Shading devices with HSA or VSA of 70 degrees.
- Insulation for Roof - Exposed to sun
- Insulation for External Wall - Exposed to sun
- Single Low-E, Solar Control glass
- Double Low-E, Solar Control glass
- Design Cross ventilation
- Install Ceiling Fans in all habitable rooms
- Install VRV/VRF for Space Heating & Cooling
- Solar collectors for domestic hot water heating
- High efficient Gas Condensing boiler for Space Heating
- Energy Efficient Gas Heaters for Hot water required for domestic use
- Low energy [CFL/LED/T5] Light Fixtures for all living spaces
- Low energy [CFL/LED/T5] Light Fixtures for Corridors & Outdoor Common area
- Automatic Controls for all Corridor & Outdoor lighting
- Photovoltaics to meet X% [choose from list below] of annual electricity use

10% of annual electricity

0.00 kWp

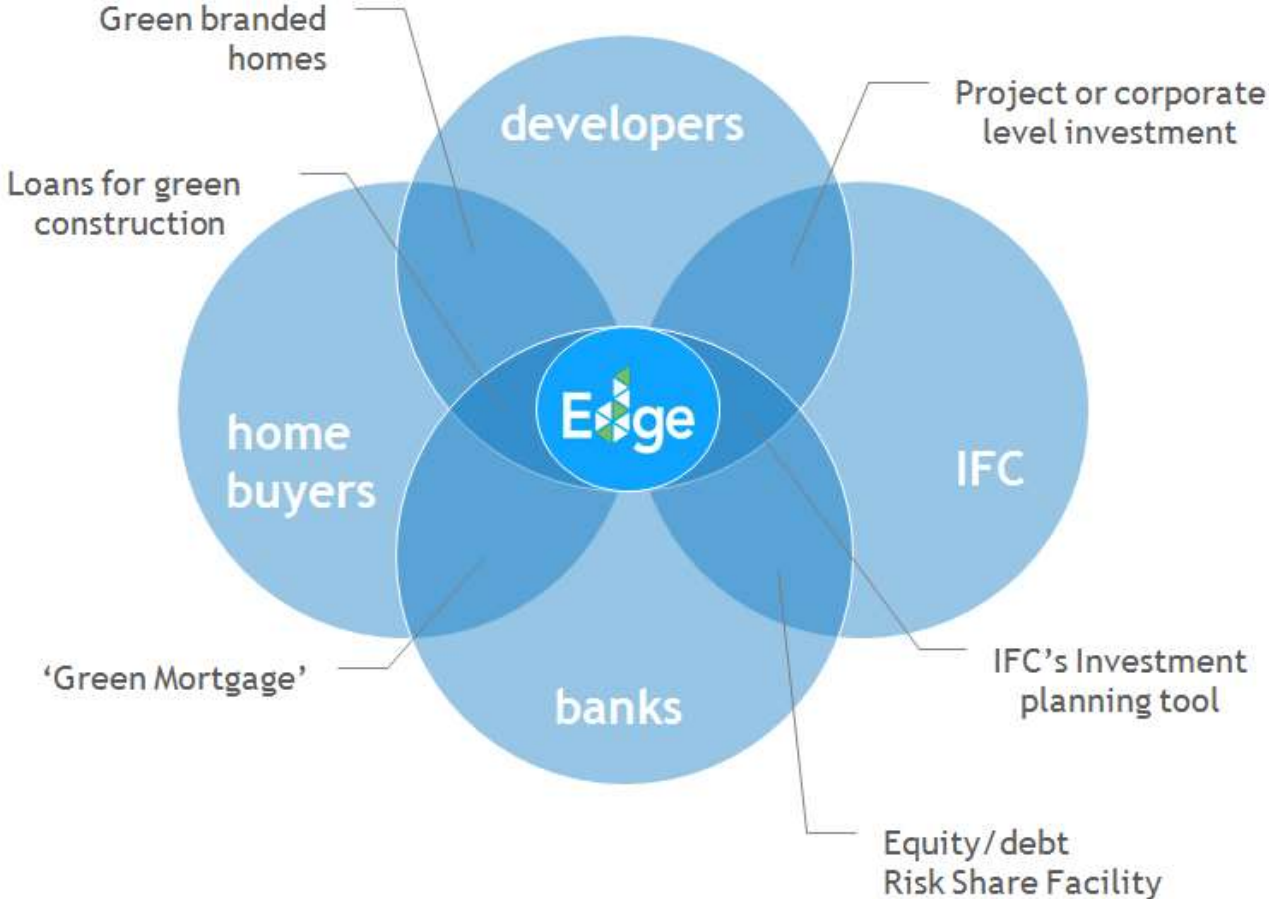
44.9% ENERGY SAVING Meets EDGE energy standard



Available for free at www.ifc.org/edge



EDGE can be useful for all...





Green Mortgages

What is a Green Mortgage?

= “Energy-efficient” mortgage:

- to finance energy-efficient upgrades of existing home
- to purchase new green home



Benefits for customer

- Lower energy and water bills
- Increase in value of green home
- Lower default rate

Example Mexico: Green homes market can take off with right incentives and provide enhanced quality of life for homeowners



Jose, homeowner: “The Green Mortgage Program offered by INFONAVIT helped me to realize my dream. The utility bill decreased by 40% once we moved in!”

Green home market in Mexico:

- 600,000 homes per year
- 2.4m beneficiaries
- Green mortgage of up to USD 125,000
- Savings on utility bills offsets monthly mortgage

Offering Green Mortgage loan products – benefits for lenders

Market share growth

- Opportunity for market differentiation

Higher cross sell and loyalty

- Opportunity for cross-selling
- Stronger retention rates

Reduction of credit risk

- Higher collateral due to higher homes values
- Lower default rates in comparison with standard mortgages

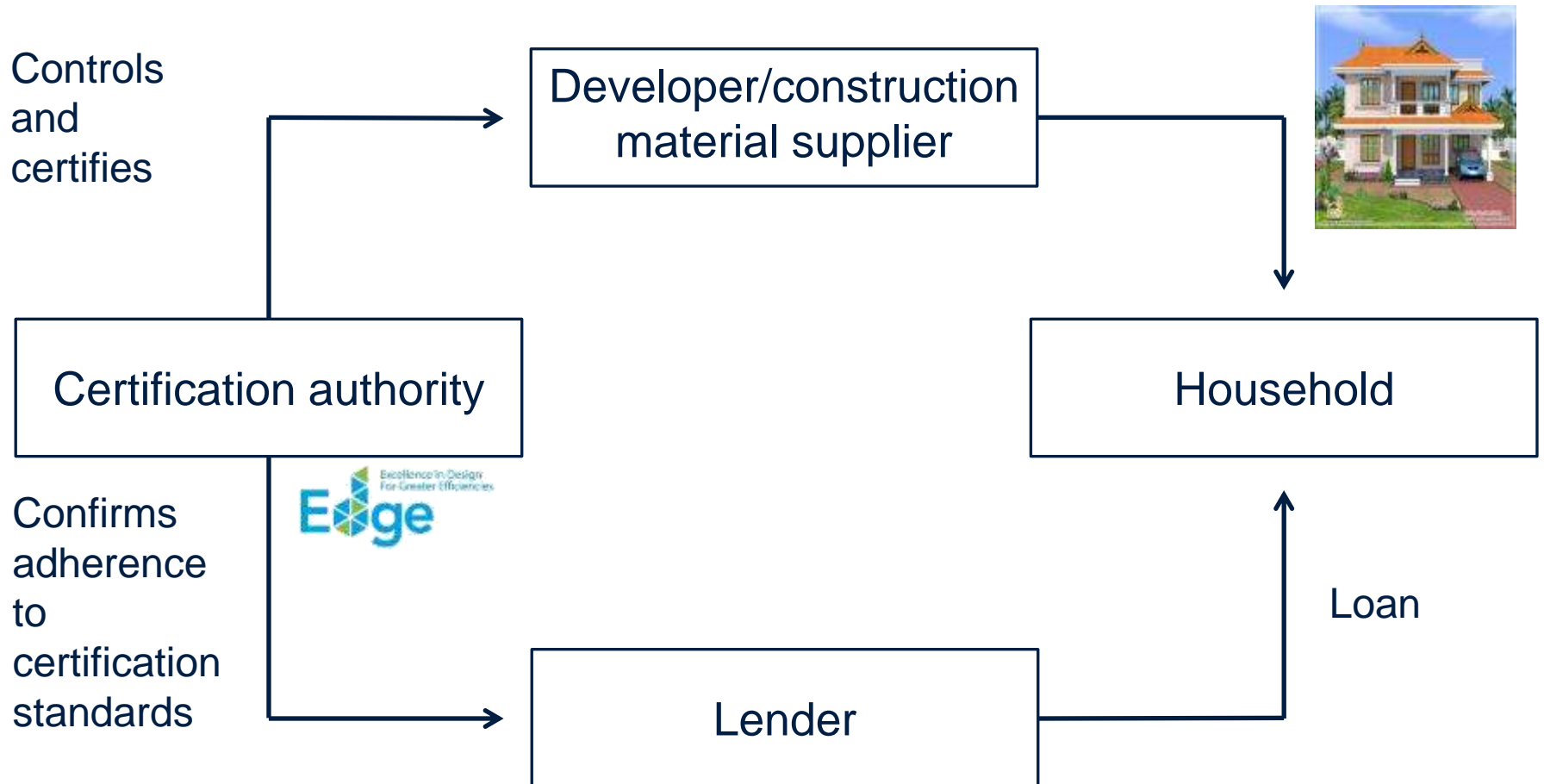
Positive branding

- Innovator reputation, enhanced corporate social responsibility

IFC's offer in investment and advisory services to support green housing solutions in India

Investment Services	Advisory Services			
	Strategy & Market intelligence	Product Design Management	Training	Dissemination & branding
<ul style="list-style-type: none"> ▪ Risk Sharing facilities ▪ Credit lines ▪ Loans ▪ Equity ▪ Credit Insurance ▪ Supply chain finance 	<ul style="list-style-type: none"> ▪ Customer diagnostic & needs assessment ▪ Green housing market research and entry strategy ▪ Green housing customer guide/tool 	<ul style="list-style-type: none"> ▪ Product support package template ▪ Internal eligibility process ▪ System for Periodic review ▪ Sales and market strategy 	<ul style="list-style-type: none"> ▪ Awareness training for Management ▪ Green mortgage skills training course for staff ▪ Green housing training package for developers and home buyers 	<ul style="list-style-type: none"> ▪ Toolkit for green housing ▪ Events & seminars program ▪ Outreach program developer/homebuyers

Typical project design to create market for Green Mortgages in India



The IFC program India Green Building Program targets transformation of market





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- Achievement in Inclusive Business

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Structure of IFC Green Housing Finance Toolkit – a guide to implement Green Mortgage Lending Programs within a lender’s organization (I)

- Goal: bridge supply and demand side of green housing finance
 - Catalyze primary market origination of green mortgages/other green housing finance products (including housing microfinance)
 - Promote development of and investment in green technologies and materials
 - Develop attractive incentive mechanisms to implement and to make housing more affordable

Structure of IFC Green Housing Finance Toolkit – a guide to implement Green Mortgage Lending Programs within a lender’s organization (II)

- Structure:
 - Green housing finance product design
 - Market entry assessment, marketing and sales strategy
 - Internal processes
 - Annexes (tools to calculate energy savings and determine loan pricing for both new construction and home improvements, etc.)
 - Training programs for lender staff
 - Education program for borrowers
 - Operating manuals/practical tools

Example Albania: creating a market for green housing finance to support reduction of energy consumption

Market needs:

- The housing sector in Albania consumes 54% of all electricity available.
- The price of electricity increased by 66% between 2003 and 2010; further increase in January 2013
- The energy market will be liberalized in 2015
- 34% of households have access to bank accounts
- Households have a monthly utility bill of \$ 200-300

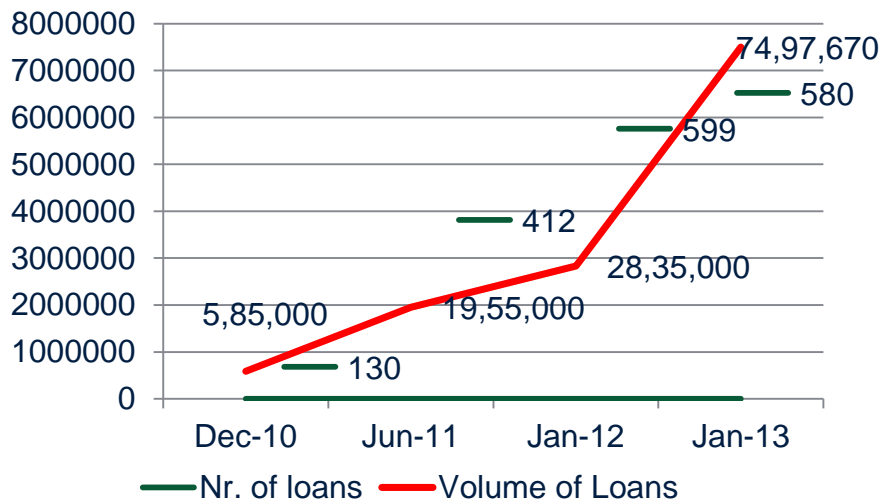
Financing needs:

- 88% of the buildings were constructed before 1990 and require energy efficiency renovations
- Potential investment need is estimated at \$ 300-600m



Albania: with help of IFC, a viable market for energy efficiency (EE) loans was created

Number of EE loans outstanding in USD at Banka Credins, an IFC client



Source: Banka Credins

Demonstrated business case and market potential:

- Program has been working with 2 MFIs, 3 banks
- Excellent EE loan portfolio performance: NPL 0.56% in all institutions – other consumer loans: 8% PAR
- Surge in demand for EE loans: IFC investments of USD 4m

Conclusion: paving the market for green mortgages in India



- Indian market offers opportunities for lenders and developers to benefit from surging demand for green mortgages
- Numerous investment opportunities:
 - US\$ 5.8 billion required to support urbanization in cities >1m
 - Market potential for Green building products and technologies: US\$ 120 billion

Source: IGBC, CII-Godrej

“Well-insulated windows makes doing homework easier 😊 “

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