

# IFC'S GREEN BUILDING MARKET TRANSFORMATION PROGRAM AND FINANCIAL PRODUCTS FOR CITIES



# GREEN BUILDINGS ARE GOOD FOR MUNICIPAL AND HOUSEHOLD BUDGETS, NOT JUST THE CARBON BUDGET

## GHG impact

19%

of world's GHG emissions are from buildings. 30%-50% of all cities' GHG emissions come from buildings

## Economic impact

80%

of the economically viable energy savings in buildings is left untapped

## Lower living costs

15%

of disposable income spent on utilities by low-income can be reduced 20%

## Urban growth

58

countries will double their urban populations in the next 25 years

If the right investment choices are not made today, we will be locking into high-energy urban infrastructure for decades

Green construction offers a chance to secure emission cuts at low cost, improve public and private efficiency and welfare, and lessen the need for costly water and energy infrastructure investments.



# OVERCOMING THE INITIAL BARRIERS TO GREEN BUILDINGS CAN UNLEASH A VIRTUOUS CYCLE ACROSS A CITY

**Lack of awareness and experience** leads to the perception of complexity and high cost, and resistance to green codes

*"We would fund efficient buildings, but there is no demand for them."*



Home Owners

*"We would like lower utility bills but there aren't any efficient homes."*

**Free, easy-to-use, design assistance with built-in cost estimation, simplifies green design decisions**



Investors

Value creation among all market players.



Builders

**Lack of common standards** holds back demand and sources of green finance

*"We would ask for energy-efficient homes, but investors won't finance them."*



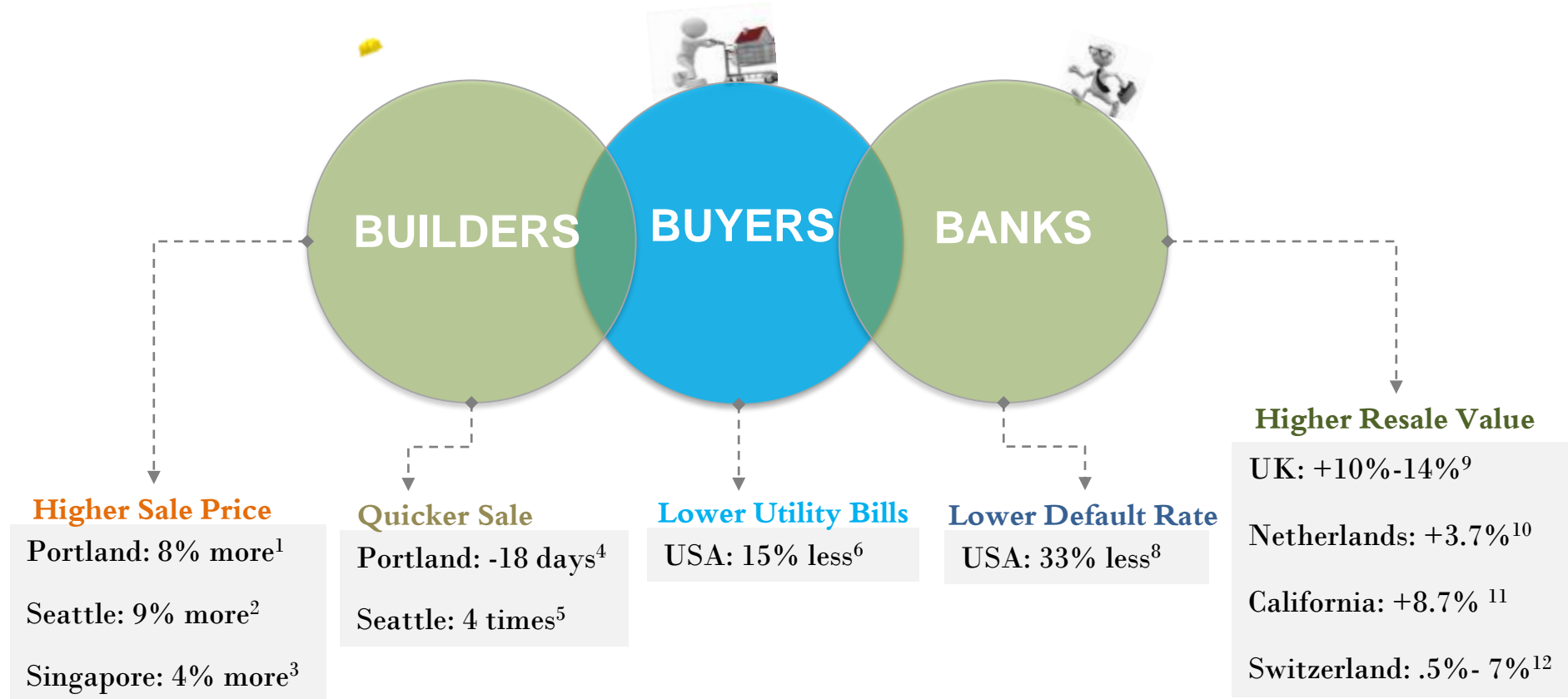
Developers

*"We can build energy-efficient homes, but developers don't ask for them."*

**Demonstration projects build awareness, experience and local capacity**

IFC developed the free [EDGE](#) design software and affordable certification system to help overcome these barriers where local certification systems have not gained traction. IFC's building investments are now almost always green and exceed \$3 billion.

# GREEN LABELLING HAS ALREADY DEMONSTRATED THE BUSINESS CASE FOR GREEN BUILDINGS IN DEVELOPED COUNTRIES



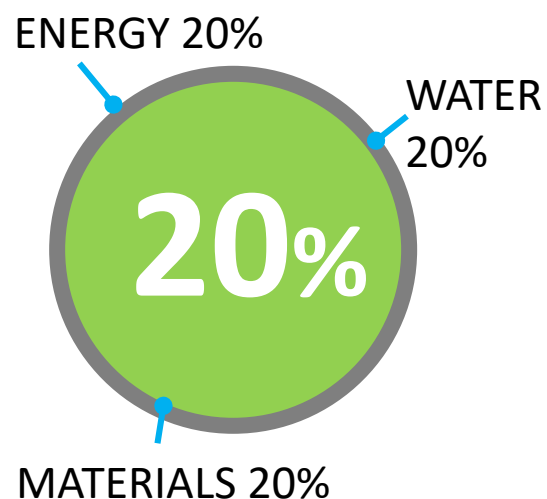
Multiple studies have documented improved asset values, lower utility bills and better green mortgage performance. Once initial barriers are overcome, market forces will push investment toward green assets.

# EDGE CERTIFICATION DEMONSTRATES THE BUSINESS CASE IN DEVELOPING COUNTRIES WITH MINIMAL TIME AND AND CASH INVESTMENT

- ① **FREE SOFTWARE**  
SELF EVALUATION IN 20  
MINUTES, SHOWING  
ADDITIONAL COST (1-2%) AND  
PAYBACK PERIOD



- ② **SIMPLE STANDARD**  
MEET STANDARD OF 20%  
EFFICIENCY AGAINST  
LOCAL BENCHMARK



- ③ **SCALABLE LABEL**  
EDGE CERTIFICATE  
COMMUNICATES VALUE  
BETWEEN INVESTOR,  
DEVELOPER, AND BUYER



EDGE can help your city reduce the burden of additional water and power infrastructure, decrease school, hospital and public housing costs, decrease running costs for householders and operating costs for businesses.

Homes

Hotels

Retail

Offices

Hospitals

Education

Base Case Utility Cost 102,432 \$/Month

Utility Costs Reduction 40,040 \$/Month

Incremental Cost 915,675 \$

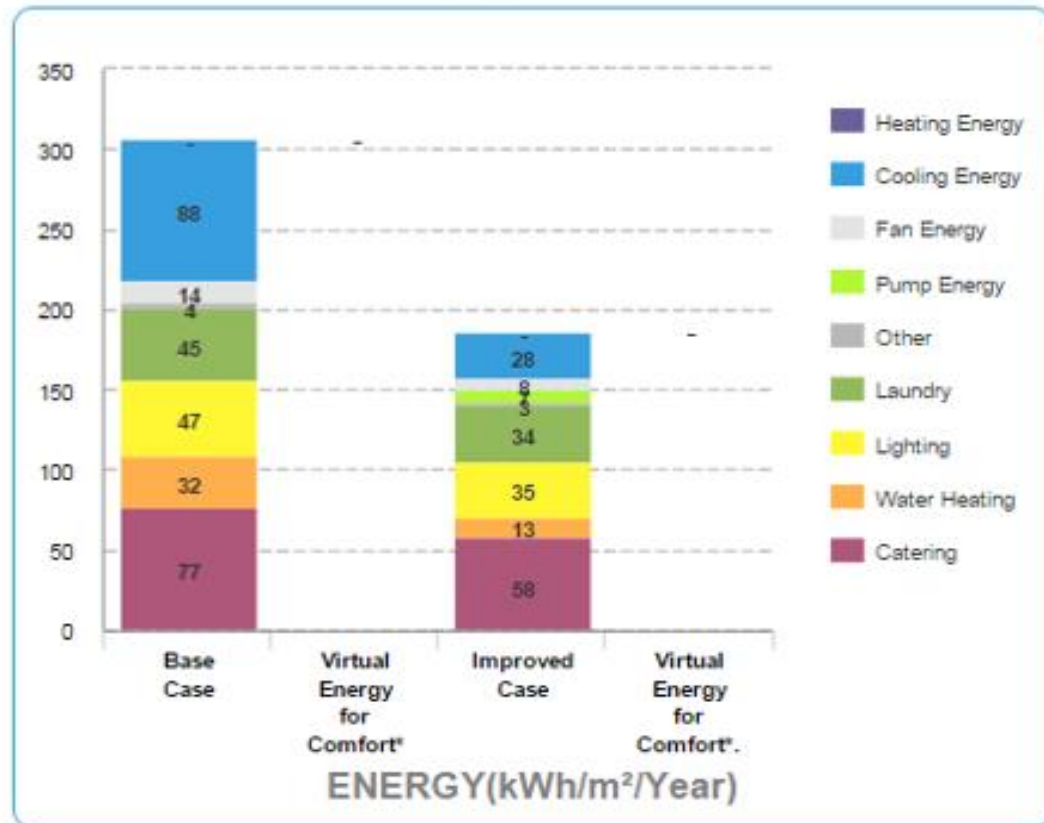
Payback in Years 1.9 Yrs.

## Energy Efficiency Measures

Select options from the list below

- ☒ Reduced Window to Wall Ratio - WWR of 40%
- ☒ External Shading Devices - Annual Average Shading Factor (AASF) of 0.58
- ☐ Insulation of Roof Surface - U Value of 0.45
- ☐ Insulation of External Walls - U Value of 0.45
- ☒ Low-E Coated Glass - U Value of 3 W/m<sup>2</sup> K and SHGC of 0.45
- ☒ Higher Thermal Performance Glass - U Value of 1.95 W/m<sup>2</sup> K and SHGC of 0.28
- ☐ Natural Ventilation - Corridors
- ☐ Natural Ventilation - Guest Rooms with Auto Controls
- ☐ Variable Refrigerant Volume (VRV) Cooling System - COP of 3.45
- ☐ Air Conditioning with Air Cooled Screw Chiller - COP of 3.2
- ☐ Air Conditioning with Water Cooled Chiller - COP of 5.39
- ☐ High Efficiency Condensing Boiler for Space Heating - Efficiency of 90%
- ☐ High Efficiency Boiler for Water Heating - Efficiency of 90%

39.3% Meets EDGE Energy Standard



# EDGE MILESTONES

- EDGE software: in 5 languages; 140 countries.
- EDGE certifiers are now the largest green building network in the world
- EDGE used by Green Bond Principles, commercial banks (India, Turkey, South Africa, Costa Rica, Oman, Philippines)
- Member: UN Global Alliance for Buildings and Construction; Building Efficiency Accelerator

3 billion +

Dollars Invested by IFC alone using EDGE software.  
FY13-17.

4 million +

Square meters of area already registered and  
certified across 100 projects

60,000

unique users





# HOW CAN IFC HELP TO TRANSFORM YOUR MARKET?



- Support government fiscal and non-fiscal incentive structuring to encourage green buildings



- Support resource efficiency in government buildings, affordable housing, military housing, hospital and school projects



- Build local capacity in voluntary certification (EDGE) including EDGE Expert training for public and private sector professionals



- Mobilize finance for municipal projects and private sector green construction and mortgages





# IFC WITH LOCAL GOVERNMENTS

## WESTERN CAPE DEPARTMENT OF HUMAN SETTLEMENTS



EDGE is a green building standard & certification that require buildings to be 20% more efficient in energy, water and embodied energy in the materials.

**In the Western Cape Department of Human Settlements IFC is offering:**

- Training for staff on IFC's EDGE green building standards
- EDGE Certification and support to achieve EDGE standards for potentially 20,000 social housing units per annum
- Belhar Gardens in Cape Town, with over 600 homes, will be the first social housing development to be EDGE certified in South Africa.
- Alternative sources of funding to cover the incremental costs of going green (being explored)

**EDGE IN SOUTH AFRICA:** began Q3 2015; 2017 saw the first homes that were built to EDGE standards reach certification.

SOUTH AFRICA	Performance to Feb 2018	
Homes certified	5,215	units
Homes registered for certification	12,549	units
Energy savings	642	MWh / year
Water savings	27,711	m <sup>3</sup> / year
Green House Gas savings	409	tCO <sub>2</sub> e / year

# IFC WITH JAKARTA, INDONESIA

## WHAT DID WE ACHIEVE?

### It's mandatory!

Governor Decree No. 38/2012 on Green Building (Pergub 38/2012)

Jakarta Provincial Government, with the support of the International Finance Corporation (IFC), the Swiss Government and the Government of Hungary, has published Pergub 38/2012 as a reference for the community to realize the implementation of buildings that takes into account the aspects of conservation and use resources efficiently.

[read more](#)

### Support on deployment and implementation of green building code.

The Codes designed to reduce carbon emissions and energy and water consumption. The Provincial Government, supported by the IFC introduced regulation 38/2012 to all large new and existing building.



### Scaled up Voluntary EDGE certificated Green Buildings

Launch voluntary certification- EDGE with Green building Council Indonesia. Provided financing to green projects Partial Credit Guarantee for green construction (\$26m) and Loan for green affordable housing developer (\$30)

## IMPACT AND VALUE ADD TO JAKARTA

### GREEN BUILDINGS BUILT

14m

Square meters of new building space has complied with these codes. Equivalent to ~1/3rd of offices in Manhattan

### MONEY SAVED

\$70M

in electricity costs against typical construction for Jakarta citizen

### FINANCE FOR PRIVATE SECTOR

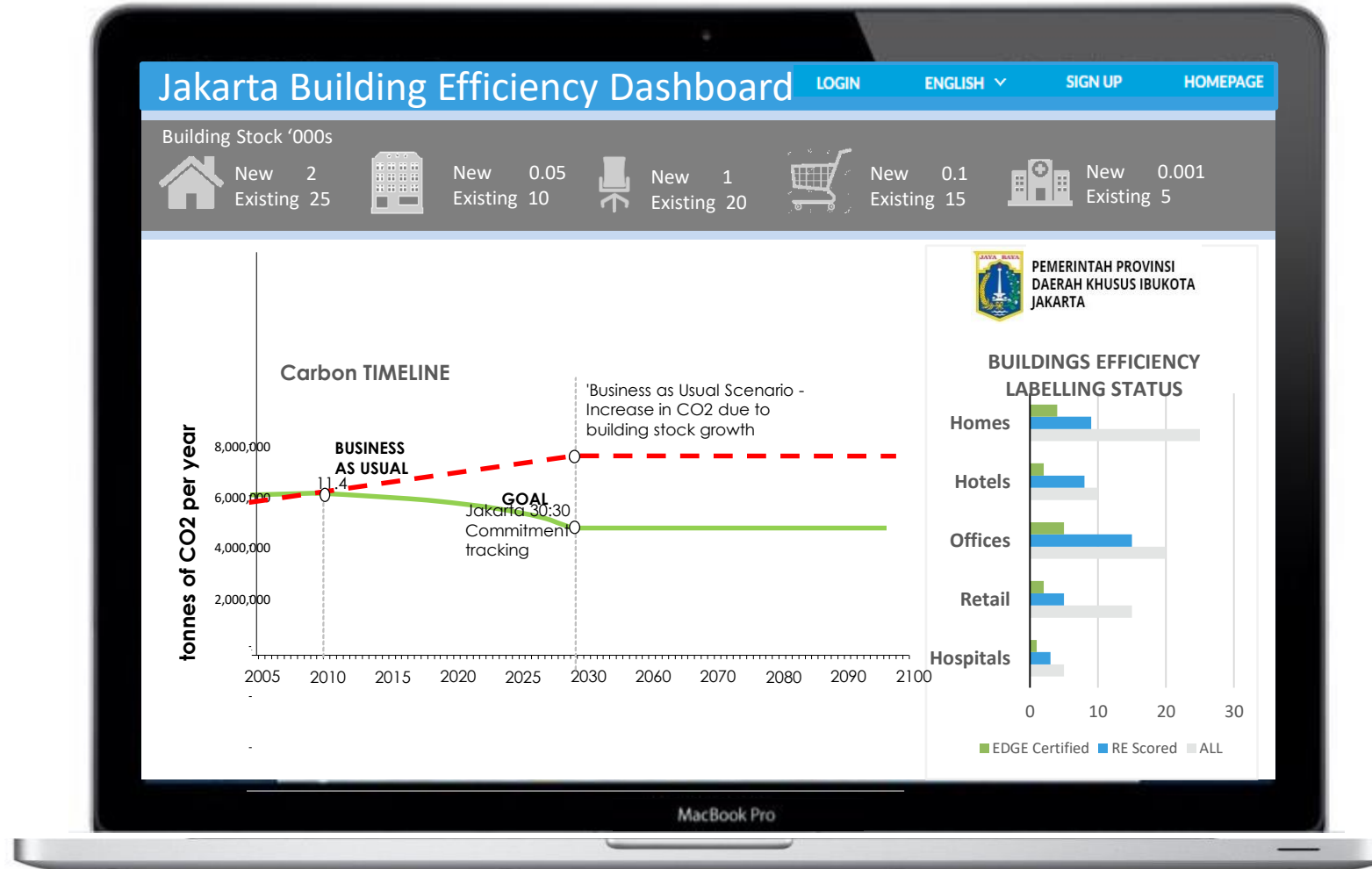
\$56M

investment in Jakarta from IFC in green buildings

# EXAMPLE OF HOW WE ENGAGED WITH INDONESIA

## SMART AND SUSTAINABLE JAKARTA CITY ROADMAP FOR THE FUTURE (UNDER DEVELOPMENT)

IFC is currently working to develop a strategic framework and roadmap that provides the Jakarta City Government with the basic information it needs to decide on an action plan to reduce the City's carbon footprint by 30% by 2030



“EDGE dashboard” can enable macro level monitoring of green building uptake in a city.

This allows tracking the large-scale adoption of Green Building Standards in Jakarta toward the 30:30 Commitment.





# OTHER EXAMPLES OF WHAT IFC HAS DONE ON GREEN BUILDINGS IN CITIES

Codes &  
Incentives



Investments and  
financial products



Monitoring and  
funding retrofits





# OTHER EXAMPLES OF WHAT IFC HAS DONE ON GREEN BUILDINGS IN CITIES

## Codes & Incentives



### Mandaluyong city, Philippines

Collaboration with the government, businesses and professional organizations to create a market for green buildings.

Working with Mandaluyong City, IFC supported the development of mandatory green building codes that led to the city's adoption of a green building ordinance and setting up voluntary standards (EDGE).

### Jakarta, Indonesia

Support on deployment and implementation of green building code.

Launch voluntary certification- EDGE.

Partial Credit Guarantee for green construction and Loan for green affordable housing developer

### Pune +, India

Join Forces with Pune Municipal Corporation to Promote the Adoption of Green Business Practices Locally.

EDGE certification partner to provide seminars, trainings and awareness programs.

PMC to provide higher floor Space Index for EDGE buildings as an incentive

## Investments and financial products



### Jaipur+, India

Investment in Mahindra World City Jaipur –a green Industrial Park that will create large-scale industrial infrastructure, attract private investments and create jobs.

The project is a participant in the C-40 Cities Climate Positive Development Program.

EDGE certification is offered across India

### Western Cape +, India

EDGE certification is offered since 2015 through the local Green Buildings Council.

Investment in IHS affordable housing fund to develop 2000 green homes with JV with local private developers.

Support to Western Cape Department of Human Settlements to get their social homes meet EDGE.

### Istanbul +, India

IFC has invested in green mortgage covered green bond in Turkey with Garanti Bank (\$150m), Yapı Kredi Bank (\$150m) and Akbank (\$150) and provided a \$80m credit line to Oedabank for green building finance.

IFC committed \$163 million and mobilized another \$265m for green hospital.

Partnership with GBC Turkey on EDGE.

## Monitoring and funding retrofits



### Belgrade, Serbia

Funding for Energy Efficiency Fund for private citizens to upgrade the energy efficiency of their buildings.

The basic idea is for the City to be the partner and guarantee of all financial and other obligations while city residents would repay invested funds through their communal services bills with no interest over a period of several years.

### Buenos Aires, Argentina

EDGE support for World Bank's Metropolitan Buenos Aires Urban Transformation Project and Buenos Aires' aim to integrate energy efficiency considerations with Villa 31's slum upgrading plan.

Through training, advisory services and access to free software, authorities are able to evaluate the resource efficiency features.

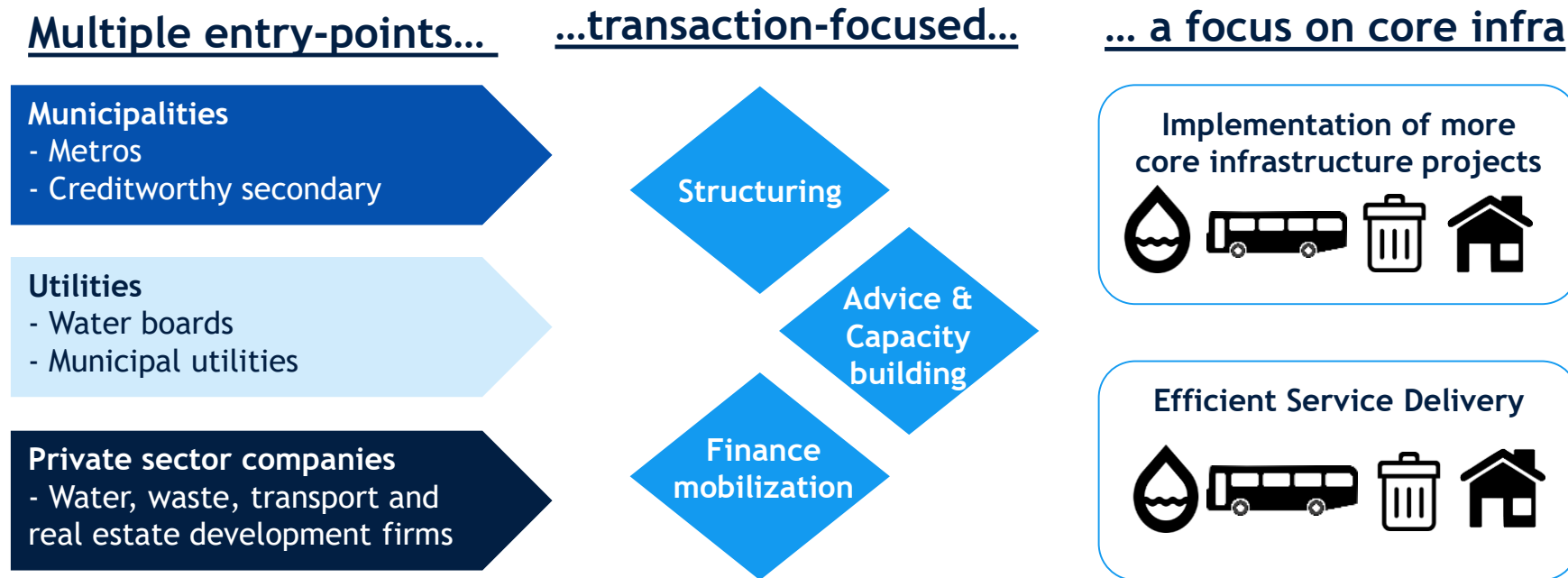
### Shanghai +, China

Shanghai Changning district EDGE labeling project for 160 tall buildings. \$300m investment by IBRD/GEF for energy efficiency retrofits.

Partnership with Ministry of Housing and Urban-Rural Development on EDGE. EDGE adjusted to local building codes and zero net carbon (ZNC) buildings.

# IFC HELPS MUNICIPAL CLIENTS IDENTIFY AND IMPLEMENT SOLUTIONS FOR THEIR URBAN INFRASTRUCTURE CHALLENGES

We seek long-term partnerships with City officials who have vision and influence



By mobilizing commercial finance & private sector solutions for core infrastructure projects, municipalities can focus their scarce public resources on other strategic sectors

# INVESTMENT PRODUCT OFFERINGS

## Core financial products

### Direct muni loans with:

- longer than market tenors
- Flexible amortization schedules and grace periods to meet project needs

Offtake & debt payment guarantees

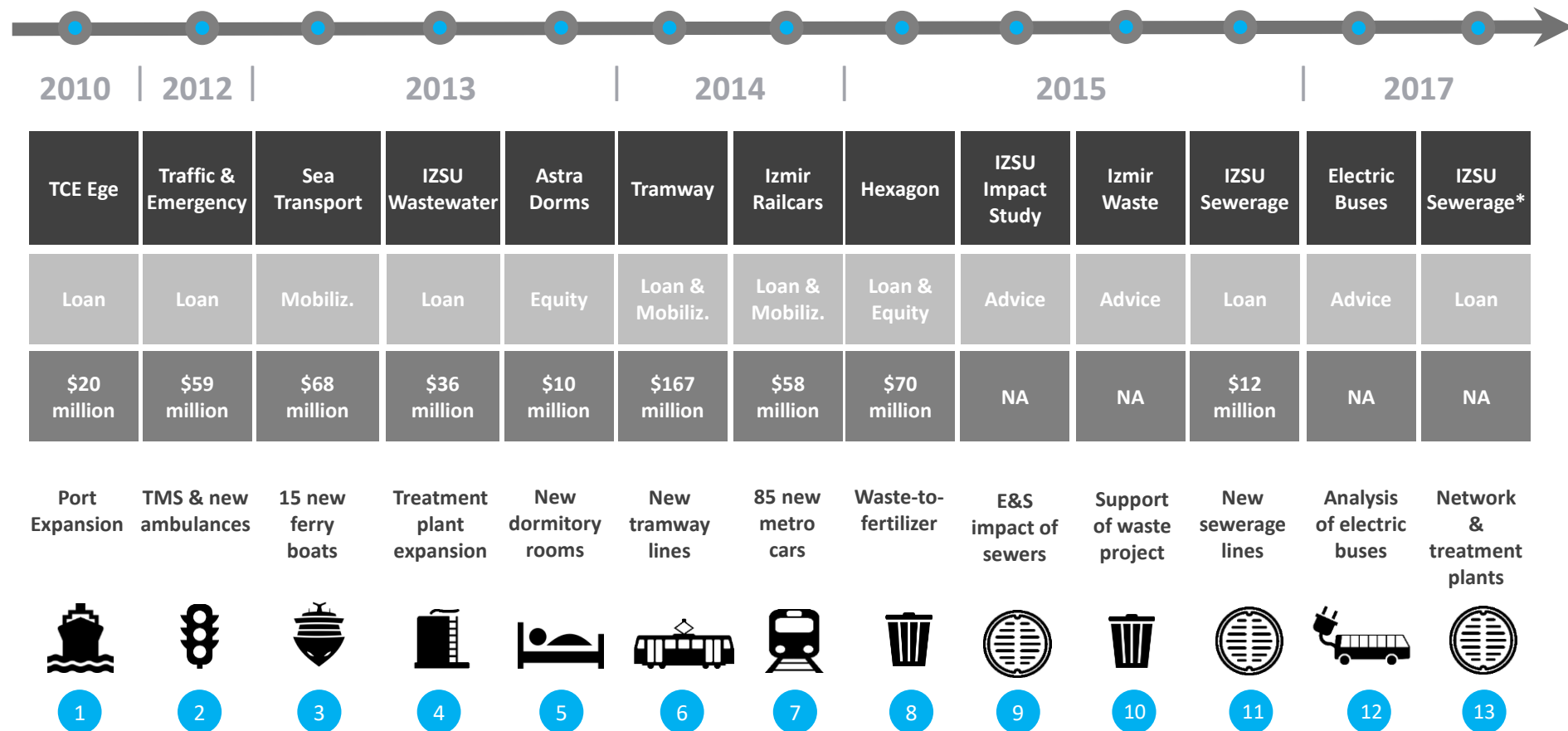
Enhancement of bond issuances

Muni co-investments w/ private sector

Mobilization of 3<sup>rd</sup> party resources

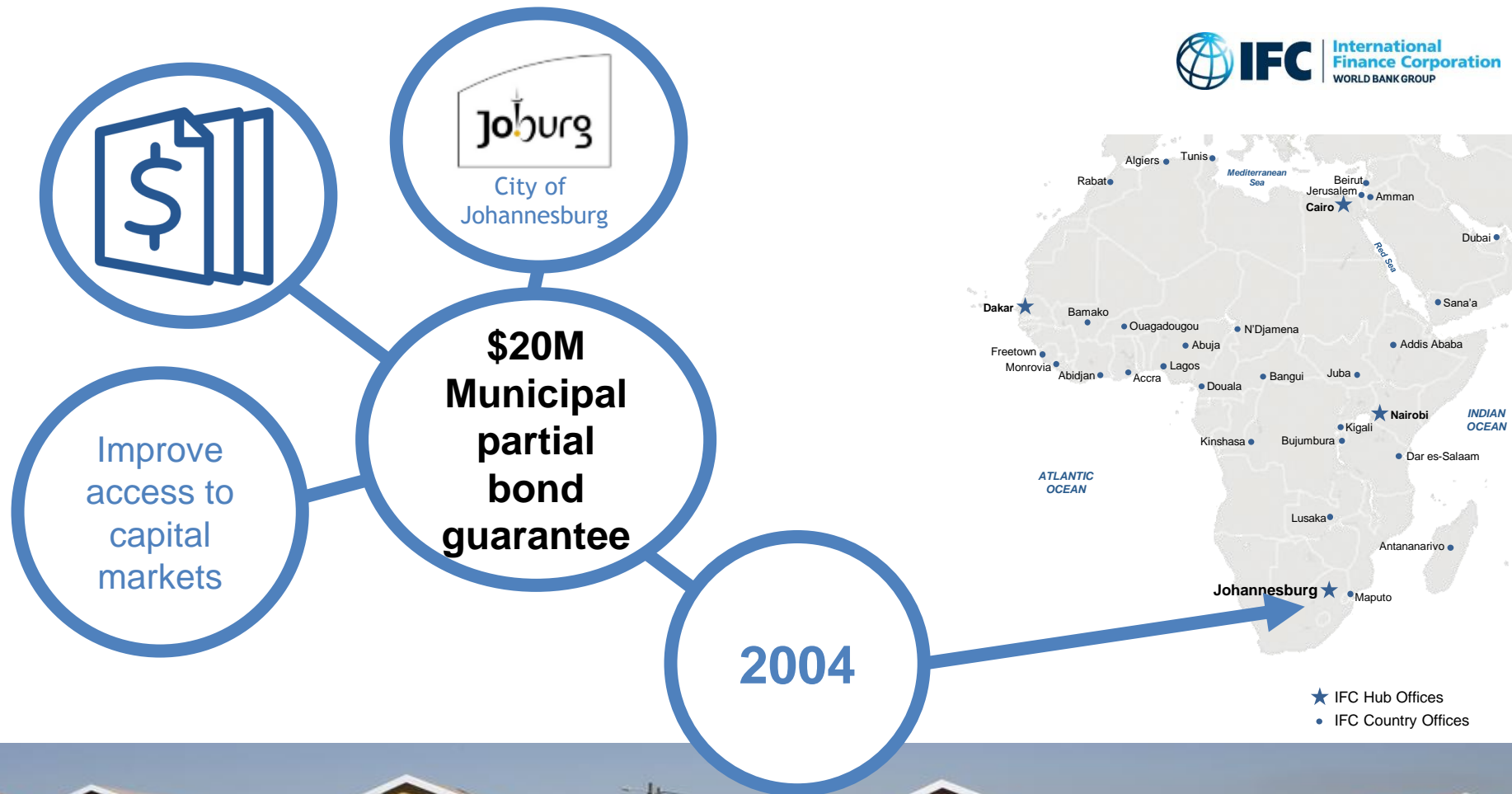
Equity & debt for private sector providers

# EXAMPLE: A DECADE LONG PARTNERSHIP: IZMIR (TURKEY) AND IFC



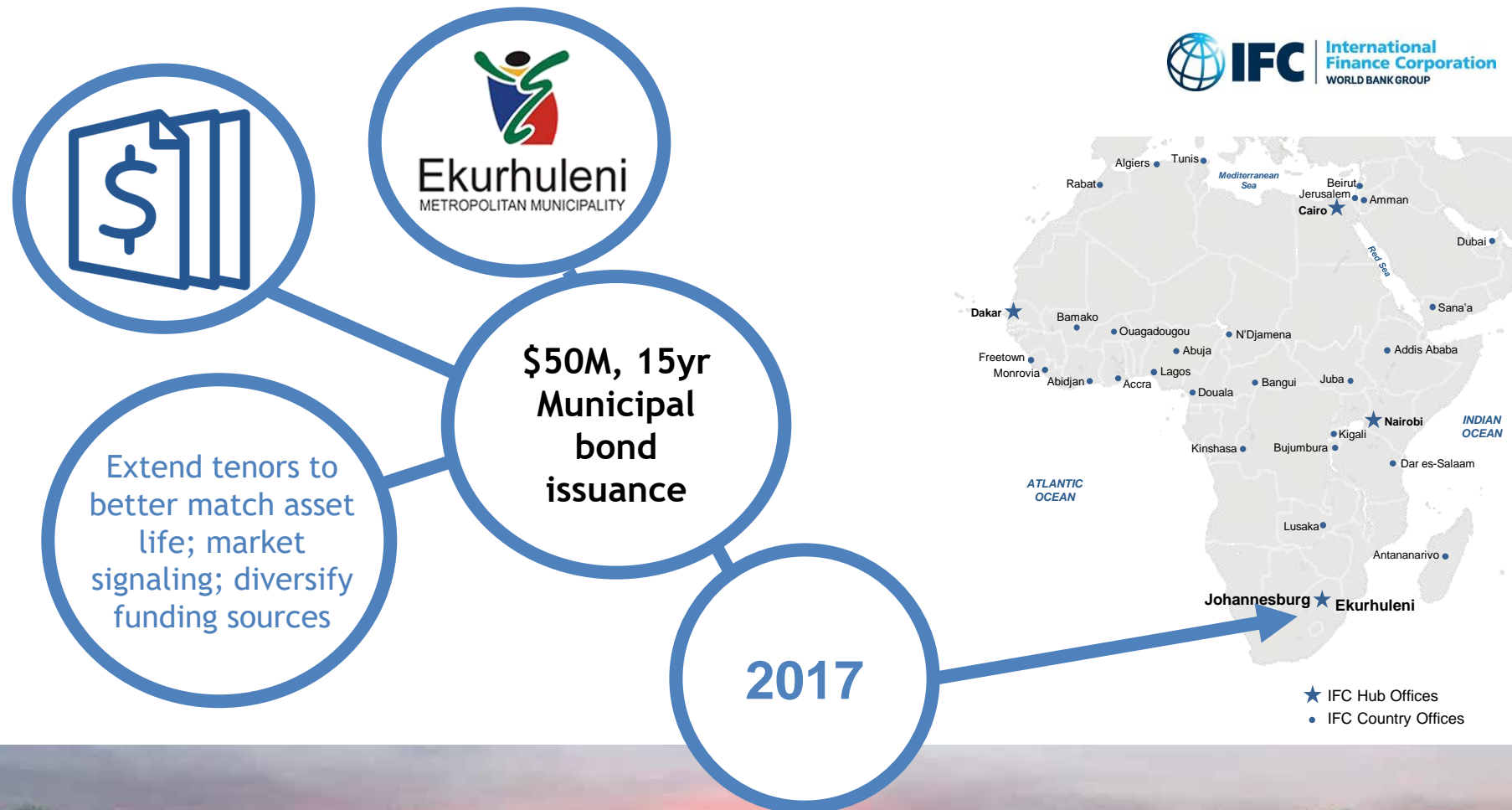
**\$500M mobilized of which half from 3<sup>rd</sup> parties**

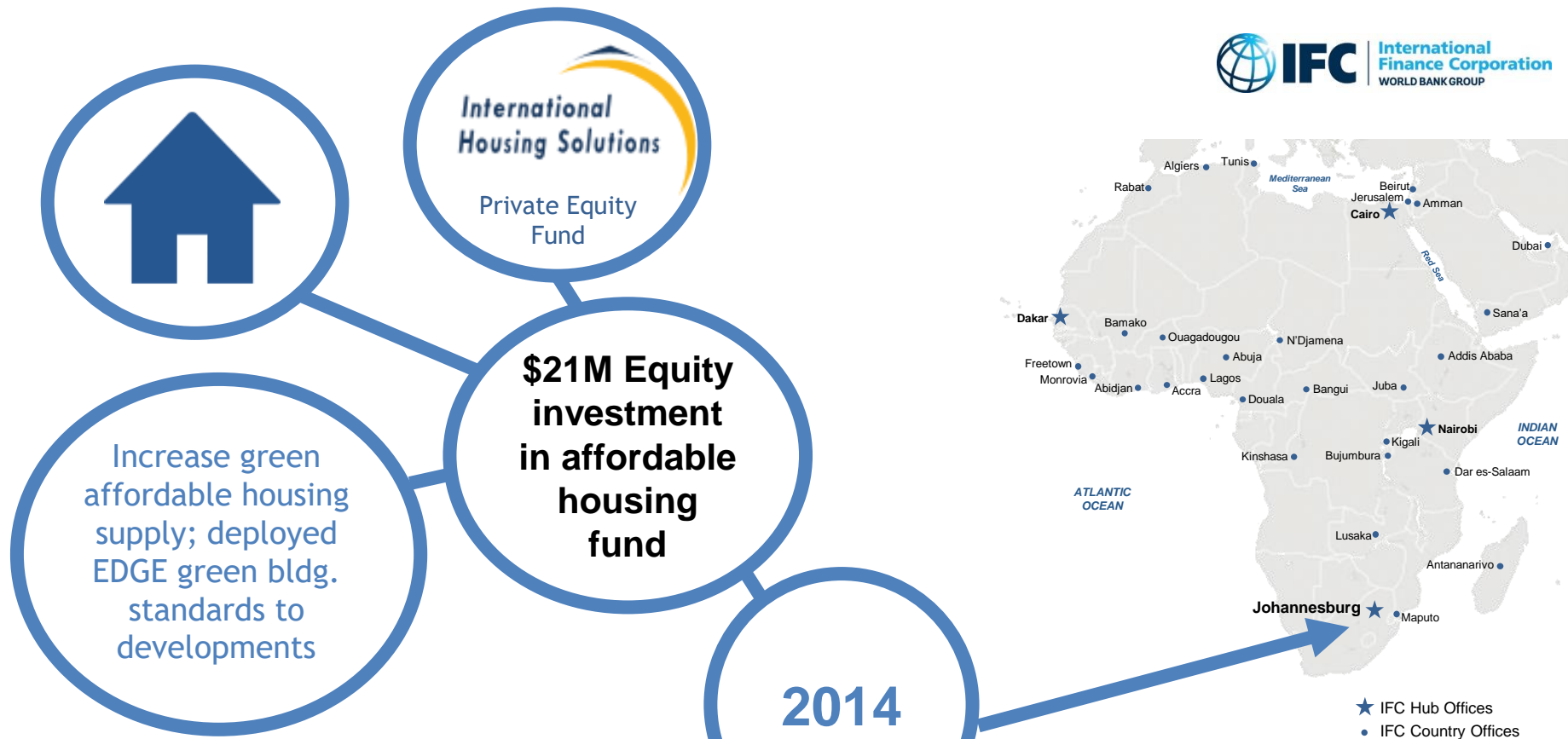














# THANK YOU

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