#### "The GRIHA Summit"

"Initiatives of the National Housing Bank to incorporate and promote green building/ sustainable habitat design"

> Arnab Roy Executive Director National Housing Bank January 17, 2014



### Background

$\wedge$		Projected Timeline	Demographic Changes
1	By 2050		World's population will reach 9 Billion
	By 2050		70% of the world's population will live in urban areas, up from 50% today
	By 2030		40.8% of India's population will be living in urban areas (current 28.4%), increasing to 50% by 2041

- Housing sector accounts for nearly 40% of energy consumption
- Populations in emerging markets are creating a huge demand for homes that need to be both affordable and green



राष्ट्रीय आवास बैंक

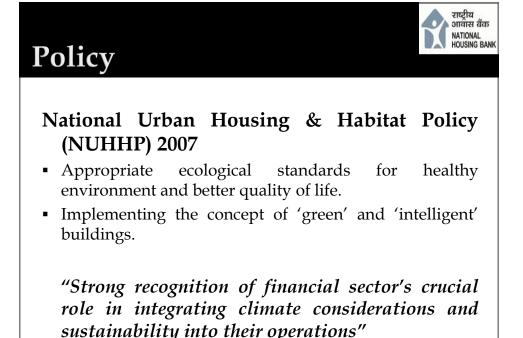
NATIONAL HOUSING BANK

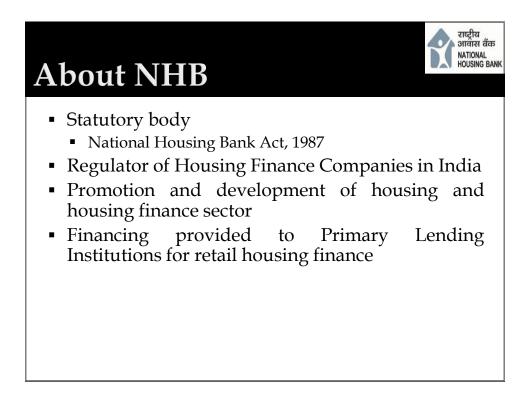
## **Energy Efficiency in Housing**

- Energy efficient housing balances all aspects of energy use in a building
  - Lighting
  - Space utilization
  - Ventilation
  - Use of energy efficient building materials
  - Use of energy efficient equipment
  - Use of alternative and renewable sources of energy
- Reducing energy demand at source
  - More sustainable in long run
  - Often with little incremental cost

#### Green Buildings: Benefits to Various Stakeholders

To Developers / Builders	To Landlords (in case of rental housing)	To Occupants / End users
Cost savings – capital &	Higher rentals	Low energy, waste disposal and
operational		water cost
Space saving because of no	Higher occupancy	Lower operational and maintenance
bulky ducting		costs
Reduced construction time	Higher values	Lower emissions and environment
schedule		costs
Improved marketability and		Higher productivity levels
enhanced value		
		Better health and satisfaction
		Demonstration of commitment to
		sustainability and environmental
		stewardship





HB's Financ	ing Products	राष्ट्रीय आवास NATIONA HOUSING
Refinance	Direct Finance	Equity Participation
<ul> <li>Term Loans</li> <li>Commercial Banks</li> <li>Housing Finance Companies (HFCs)</li> <li>Cooperatives</li> </ul>	Term Loans <ul> <li>Housing     Corporations</li> <li>Societies</li> <li>PPPs</li> <li>Self Help Groups</li> </ul>	<ul> <li>Equity stake</li> <li>Rural HFCs</li> <li>HFCs involved in housing finance to low income segments</li> </ul>
for		
<ul> <li>General Housing</li> <li>Rural Housing</li> <li>Special projects (in natural disaster affected areas)</li> </ul>		





## Partnership contd...

- Line of Credit of € 50 million on 31st Dec'2010.
- Technical assistance grant of €1.5 million.
- The Programme
  - Financial and technical assistance to stakeholders to promote EE residential housing
  - Financial assistance housing loans to individual borrowers through retail lending institutions for purchase / construction of EE residential houses / flats
  - Technical assistance Fraunhofer TERI Assessment Tool to calculate the level of energy savings of EE houses on the baseline (developed by TERI / Fraunhofer)





# Partnership contd...

- NHB has utilised the entire sanctioned amount of € 50 million i.e. equivalent to INR 381.53 crore
- 12 Projects comprising of 162 towers have been certified in the cities of Lucknow, Nagpur, Mumbai, Bangalore and NCR
- 2065 individual loans have been refinanced by NHB
- LICHFL, Axis Bank, ICICI Bank, HDFC, DHFL, and Tata Capital have availed Refinance from NHB under the Programme
- Full time TA consultant appointed to assist NHB in programme implementation

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<b>kfw</b> Toolkit for ene	rgy efficient residential buildi		S touthofer	<mark>≉kfw</mark>	Toolkit for energy efficient	residential buildi	ings in India	Traunhole:
Project: Sahara City Homes -	Type C			Project: Lotus E	Boulevard-Tower 18			
Building:			$ \longrightarrow $	Buildina:				
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Sitapur Hardoi By Pass Road,	aute of results - El	This building	Reference building	Address of project: GH-03, Sector 100, Noi		anie or legnits - El	This building	VIVITAYI': Reference building
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Gial Platesi 220020	Common lighting	1,54	1,54	Uttar Pradesh, 201301		common lighting	1,00	1,00
	Parking lighting Cooling	0,00	0,00			tanking lighting Cooling	0,00	0,00
Occupant/Owner:	Heating	3.25	3.25	Occupant/Owner:		leating	1.68	1,68
	Hot water	6,97	11,16		F	lot water	10,24	10,24
	Ceiling tans	1,74	1,74			Celling tans	0,90	0,90
	Appliances	26,00	26,00		P	pplances	25,23	25,23
Building parameters Building type:	Residential building	3		Building parameters: Building type:		losidential building	3	
Total building area:	6.174.00 m <sup>2</sup>	,		Total building area:	1	14,139,00 m <sup>2</sup>		
Climatic zone:	New Delhi			Climatic zone:		New Delhi		
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Solar street lights Efficient water pumps				Solar street lights	-	Efficient water pumps		
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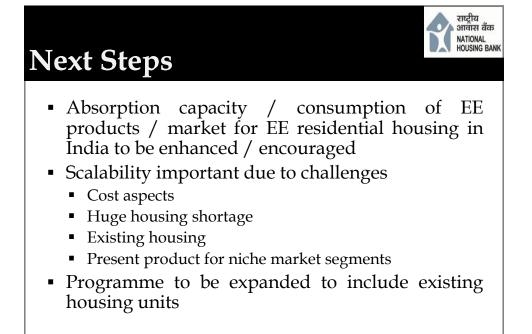
Benefits from the Programme
 Reduction in energy usage without compromise on comfort
 Building of sustainable housing and habitat to

- Duffeting of sustainable flousing and flability positively impact society and environment
   Assailability of fundament
- Availability of funds source for encouragement
  - Lenders
  - Borrowers
- Availability of assessment tool help to developers

#### **Barriers in Energy Efficient Housing Projects**



- Lack of awareness
- Perception
  - Energy efficiency is expensive requiring huge upfront investments
  - Marketing gimmick of developers
  - High maintenance cost
- Lack of awareness and information about Government schemes promoting use of solar energy, etc.



# **To Summarize**



- Energy efficiency priority area for Government and policy makers
- NHB-KfW partnership new initiative with huge scope
- Finance an important tool for promoting energy efficiency in buildings
- Scalability an important factor
- Multi-pronged approach to overcome barriers

