



# GREEN BUILDINGS MARKET INTELLIGENCE

## BHUTAN COUNTRY PROFILE



*Creating Markets, Creating Opportunities*

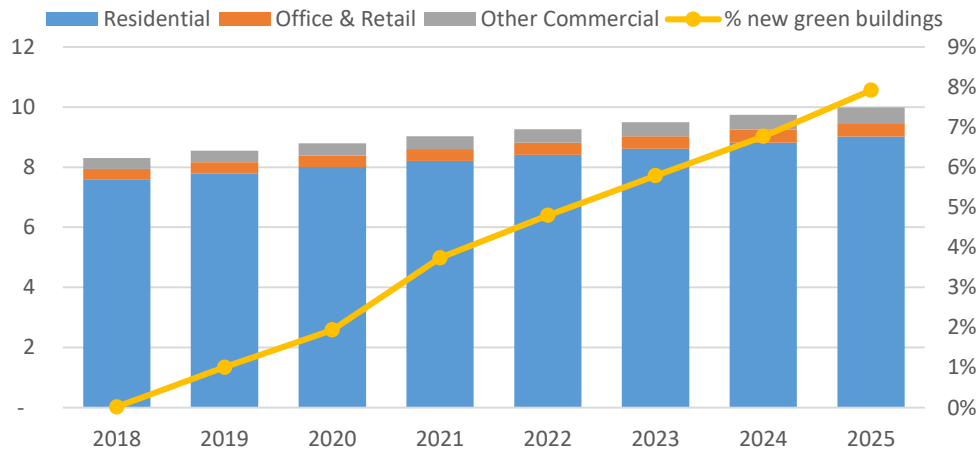


# BHUTAN: COUNTRY SUMMARY



## MARKET GROWTH

Building Stock (million m2)



## OTHER FACTORS

- GDP expected to grow by 8.2% in 2018.
- Tourism is playing a big role in Bhutan's development.
- Bhutan's Gross National Happiness Index places a strong emphasis on "responsibility towards environment".
- Constitution maintains that 60% of forest cover must remain "in perpetuity".
- Local governments in Bhutan are increasing their expenditures for sustainable development.



## CLIMATE POLICIES (NDCS)

- Bhutan's Ministry of Works and Human Settlements created Green Building Guidelines (but voluntary only).
- Government is trying to meet growing need for affordable housing, and has endorsed green public procurement, which could be needed incentives for green buildings.



## MARKET STATUS

- Growth in real estate development is coming from public sector education projects as well as hotels and offices.
- The latest Five-Year Plan entails building 75 new green buildings.



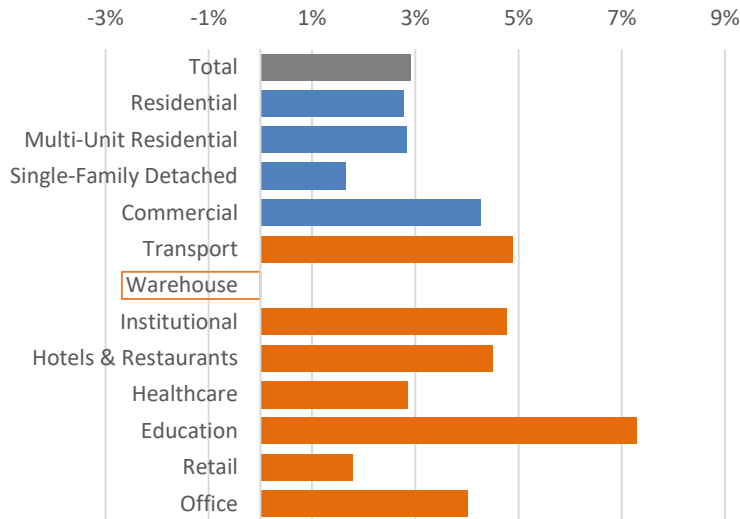
## GREEN BUILDING PROGRAMS

- Bhutan's nascent green building market is supported by the government's Green Building Guidelines and will be fueled by economic growth.
- Only 2 projects are certified as green so far.



## LITTLE GROWTH PROJECTED IN MOST SECTORS BUT TOURISM IS A KEY GROWTH DRIVER

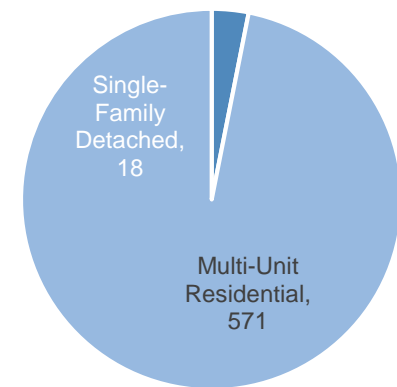
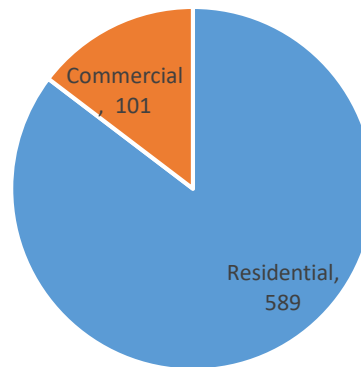
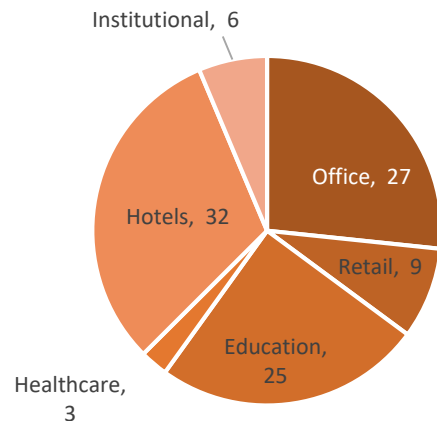
MARKET GROWTH BY SUB-SECTOR (CAGR)



Real estate development in Bhutan will be slow with most residential development being lead by multi-unit buildings.

Big projects will be led by new hotels and government investment in education.

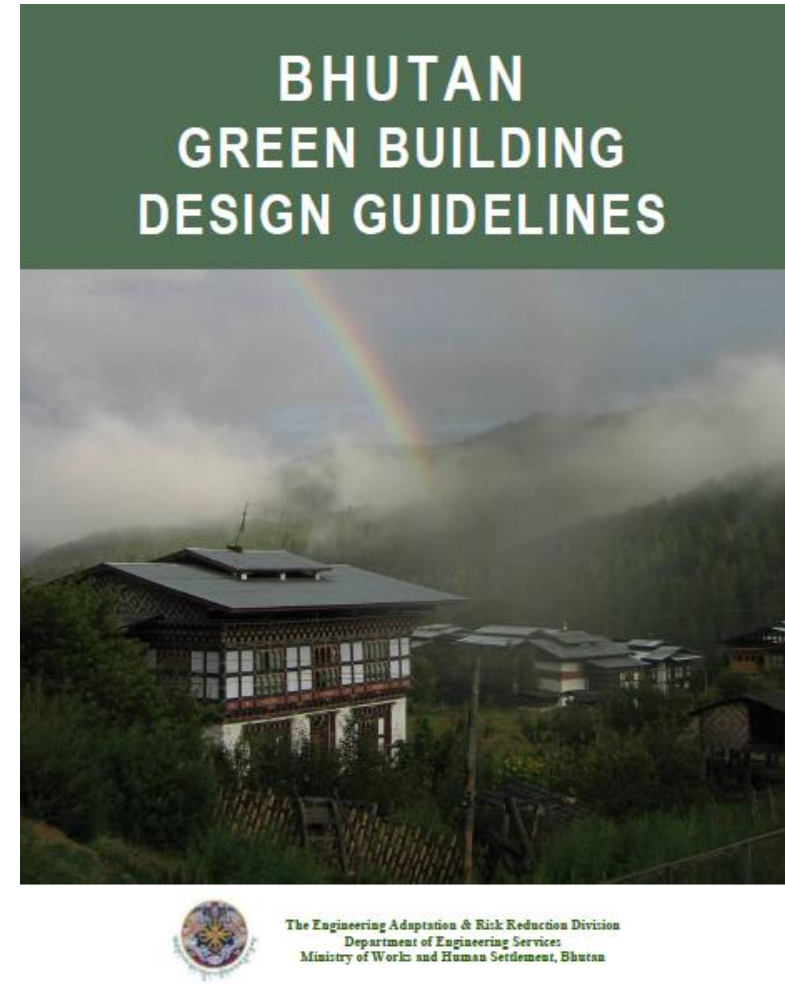
TOTAL MARKET SIZE, 2025 (USD MILLIONS)





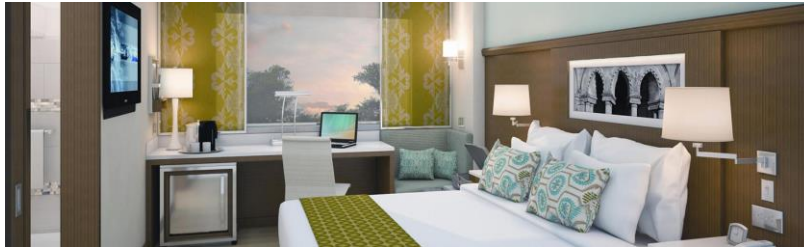
# GOVERNMENT HAS SOME **POLICIES** FOR GREEN BUT GUIDELINES ARE VOLUNTARY ONLY

- Bhutan's Ministry of Works and Human Settlements created the [Bhutan Green Building Guidelines](#) - a comprehensive set of principles that connect with existing regulations, codes, and standards.
- Guidelines are not mandatory but are a "source of information and encouragement"
- The Bhutanese government expects 15% penetration in housing and 20% penetration in commercial.
- Bhutan's small and rural population limits growth opportunities, but opportunities lie in commercial buildings, particularly hotels.





# LEARN MORE ABOUT EDGE CERTIFIED PROJECTS IN SOUTH ASIA



## SAMHI – FAIRFIELD BY MARRIOTT

Location: **Bangalore, Karnataka**  
Developer: **SAMHI**  
Sector: **Commercial - Hotel**  
Size: **Two story 92m<sup>2</sup> apartments**

Predicted Savings of EDGE Certification:



21% Energy Savings



23% Water Savings



30% Less Embodied Energy in Materials



## KESAR CITY

Location: **Changodar, Ahmedabad**  
Developer: **Armoa Realities**  
Sector: **Multi family Residential**  
Size: **1,000 units**

Predicted Savings of EDGE Certification:



23% Energy Savings



24% Water Savings



71% Less Embodied Energy in Materials

Case studies from other countries: <https://www.edgebuildings.com/projects/>





## PROJECTS CAN CHOOSE BETWEEN TWO EDGE CERTIFIERS FOR **FAST, EASY, AND AFFORDABLE** CERTIFICATION



CERTIFICATION	PRICE (PER M <sup>2</sup> , EXCLUDING PARKING)	MINIMUM
0-25,000 FLOOR AREA (SQM)	\$0.27	\$2,250
25,000-50,000 FLOOR AREA (SQM)	\$0.22	\$6,750
50,000-75,000 FLOOR AREA (SQM)	\$0.17	\$11,000

\*Price per m<sup>2</sup>; Project appoints an auditor



thinkstep

PROJECT TYPE	CERTIFICATION	DESIGN AUDIT	FINAL AUDIT	TOTAL
Residential (one unit type)	\$2,100	\$3,600	\$3,650	<b>\$9,350</b>
Commercial (single end use)	\$2,100	\$3,600	\$3,650	<b>\$9,350</b>

\*Price per type of project; Auditor fee is included

Details and registration forms can be found on the EDGE program website:  
<https://www.edgebuildings.com/certify/other-countries/>



# REGIONAL EDGE EXPERTS CAN HELP PROJECTS NAVIGATE THE CERTIFICATION PROCESS

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# RESEARCH METHODOLOGY

## COUNTRY LIST

- IFC chose countries that correspond to the [Climate Investment Opportunity Report](#) (CIO Report) as well as countries of strategic interest for IFC.
- IFC plans to release additional country analysis, pending resources.

## TOTAL MARKET OVERVIEW

- Building stock was sourced from the [Global Building Stock Database](#) and confirmed by country experts, if possible.
- The research team found local prices for capital construction expenses, or used global proxies otherwise.
- Market sizing was executed for new construction and did not focus on retrofits.

## SNAPSHOT OF THE CURRENT GREEN MARKET

- Main source of information was the [Green Building Information Gateway](#), confirmed by local green building council reports, if such existed.
- The research team focused on properties certified as green.

## GOVERNMENT POLICIES

- Main information was sourced from [IFC's Climate Investment Opportunities Report – South Asia](#).
- Additional information was found using various searches as well as government websites.

## PROJECTIONS FOR GREEN PENETRATION

- Based on the total market growth, snapshot of the current green market, and the enabling environment of government policies, the research team projected green penetration per each of the sub-sectors.
- Weighted average of combined sector data produced the final penetration number.
- The analysis focused only on new construction, and focused only on certified properties.
- As tools for retrofits take off in the market (including IFC's EDGE product), analysis may be amended to include the retrofit market.
- Market potential may be different from numbers reported in the CIO Report, as a more conservative estimate was used for business planning purposes.

## OTHER

- Information for green building councils was sourced from [World GBC website](#).
- Case studies were presented only for IFC's EDGE green building software and certification system.
- However, lists of all green certified projects in a given country can be found through the [Green Building Information Gateway](#).
- Finally, pricing for EDGE certification was included to illustrate that green certification is affordable and achievable in emerging markets.





# ACKNOWLEDGEMENTS

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## **COLLABORATION ACKNOWLEDGEMENT**

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