CITY OF MANHATTAN BEACH CITY HALL
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TO: Honorable Mayor and Members of the City Council

FROM: Carrie Tai, Community Development Director

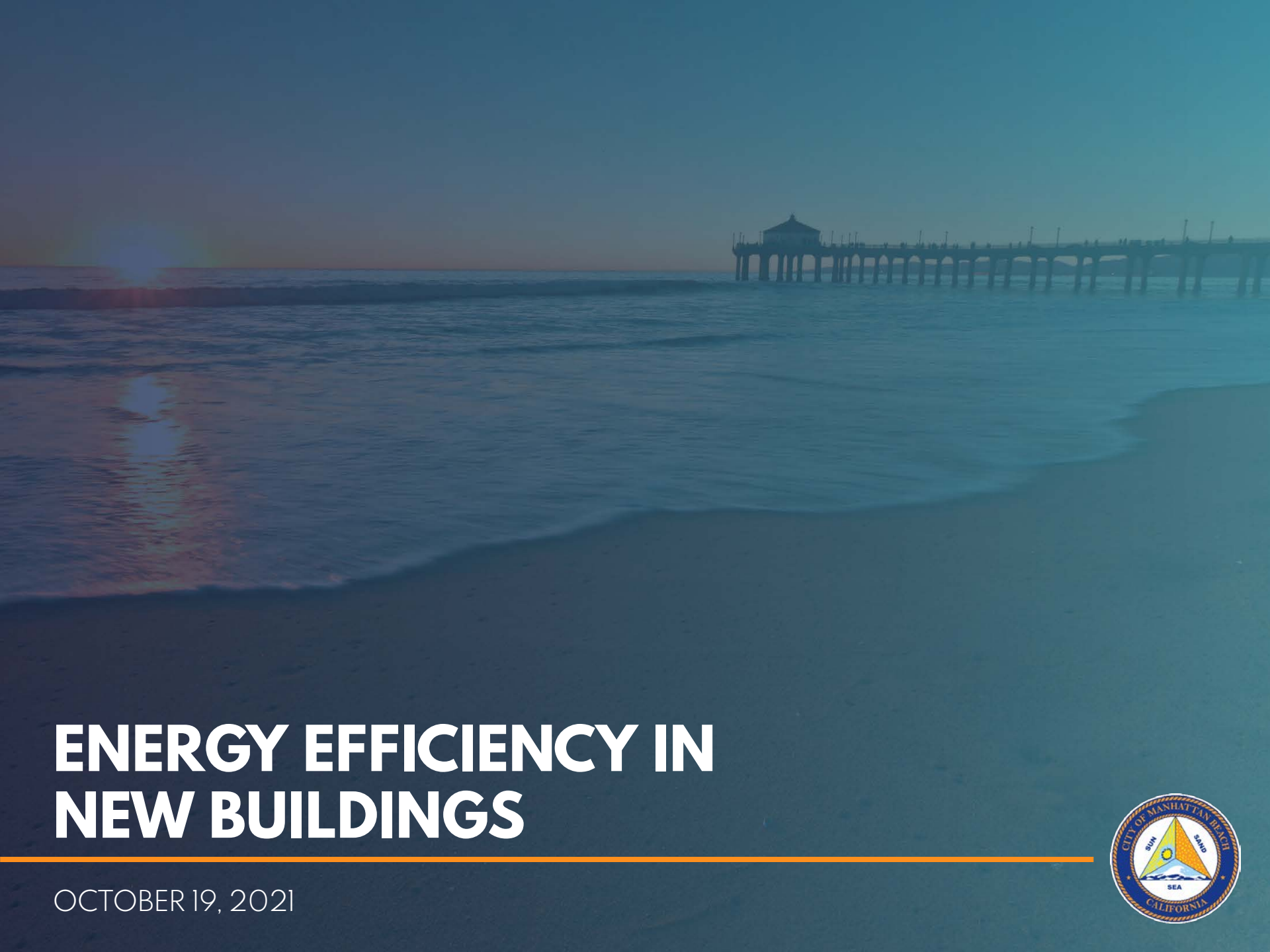
MEETING: City Council Regular Meeting, October 19, 2021

SUBJECT: Agenda Item No. 13 – Potential Requirements for Increased Energy Efficiency of New Buildings.

DATE: October 15, 2021

SUPPLEMENTAL ATTACHMENT

- PowerPoint Presentation



ENERGY EFFICIENCY IN NEW BUILDINGS

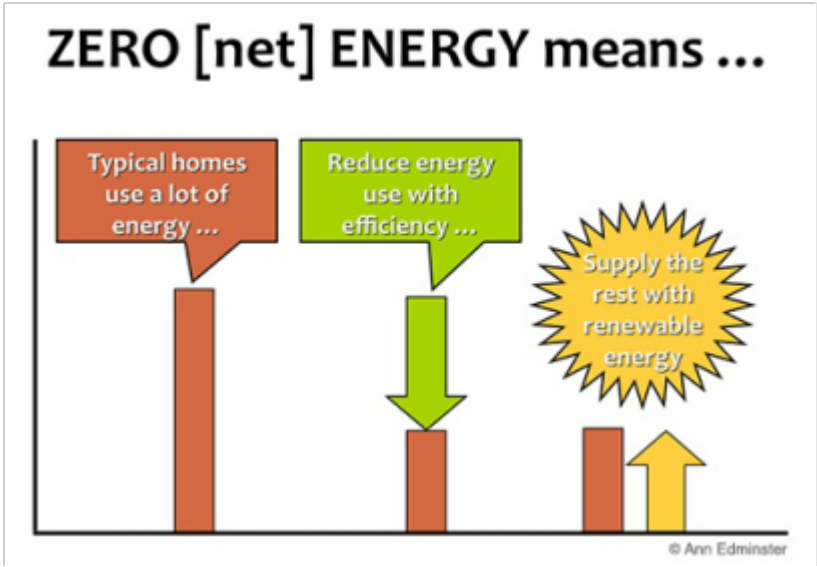
OCTOBER 19, 2021

BACKGROUND

- City Council directed staff and Sustainability Task Force to discuss and provide recommendations for increasing energy efficiency of new buildings
- City had a "reach code" from 2010-2013, 15% above the State's requirement
- Reach codes "reach" above and beyond State building requirements

BACKGROUND

- State's energy targets for new construction aim for zero-net-energy (ZNE) 2020-2025 (residential & municipal) and 2030 (nonresidential)
- ZNE is netting out a building's annual energy usage to zero through renewable energy and energy efficient buildings.
- Policy mechanisms to achieve ZNE:
  - California Energy Code
  - California Green Code



BUILDING ENERGY CODES IN MB 2019

- Every 3 years CA cities required to adopt new CA Building Standards Code
- 2019 Building Code increased energy efficiency:
  - Low-rise residential buildings with solar use ~53% less energy than 2016 standards
  - Nonresidential buildings use ~30% less energy than 2016 standards

BUILDING ENERGY CODES IN MB 2022

- CA Energy Commission adopted the 2022 Building Energy Efficiency Standards (Energy Code) in August 2021

Heat Pumps: The New Standard	New Homes to Be Electric-Ready	Solar and Storage Use Expanded

- Encourages electric heat pump technology for space and water heating
- Establishes electric-ready requirements for single-family homes
- Expands solar PV system and battery storage standards to make clean energy available onsite
- Strengthens ventilation standards to improve indoor air quality.

REDUCING GHG EMISSIONS

- AB 32: CA to reduce greenhouse gas (GHG) emissions 40% below 1990 levels by 2030.
- Buildings ~25% of CA's GHG emissions
  - 2/3 Residential buildings
  - 1/3 Non-residential buildings
- Key strategies in the building sector include:
  - Reducing GHGs through All-Electric Buildings
  - Achieving ZNE through increased renewable energy and efficiency requirements
- Local governments can draft local energy codes that reach beyond CA minimum requirements
  - 50+ cities in CA have adopted codes above state requirements related to electrification in 2019-2021

ALL-ELECTRIC NEW BUILDINGS

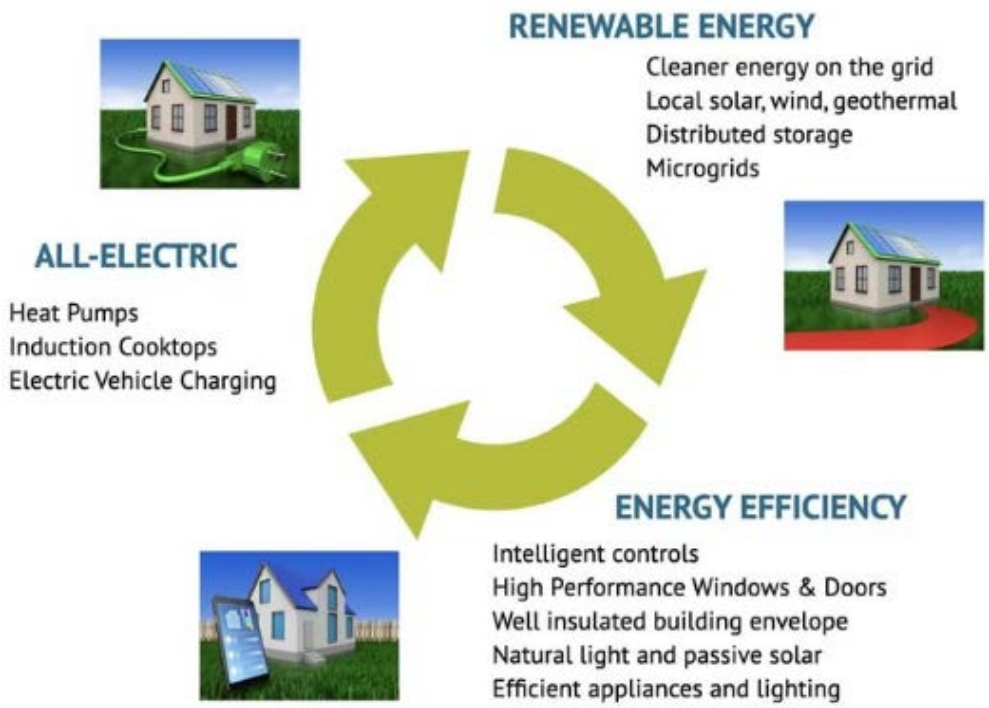


Image Courtesy of Elemental Green

- Replace fossil fuel use with clean electricity to reduce GHG emissions and improve air quality
- Most widely adopted reach code
- CA Energy Codes and Standards group studies conclude that All-Electric Buildings are cost-effective
- MB Sustainability Task Force supports All-Electric Buildings to
  - Zero out GHG emissions
  - Improve public safety
  - Improve indoor air quality

SOLAR PV ON NEW BUILDINGS

- Requiring solar PV on all new construction is second most widely-adopted reach code approach.
- Since January 1, 2020, state building regulations essentially require solar PV on new low-rise residential buildings.
- Many cities have adopted requirements for solar PV on nonresidential new buildings and high-rise residential buildings.

OTHER ENERGY EFFICIENCY APPROACHES

Photo: Manolo Langis

Photo: Sentech Architectural Systems

- Requiring higher efficiencies for mixed-fuel buildings
- Cool or sustainable roofs
- Green roofs
- Solar or electric heat pumps for pool heating and water heaters
- Green building certification from accredited programs such as LEED

POLICY ALTERNATIVES

Staff seeks City Council direction in two areas:

- Does City Council support increasing energy efficiency requirements for **new** buildings above minimum state requirements?
  - YES or NO
- If YES, identify one or more policy options to increase energy efficiency in buildings.

POLICY ALTERNATIVES

Option One: Do Not Increase Energy Efficiency Requirements for New Buildings

- Continue with business as usual
- City adopts required CA Building Standards Code in 2022

Option Two: Increase Energy Efficiency Above State Requirements for New Buildings

- Incorporate one or more policies to achieve greater energy efficiency than the 2022 CA Building Standards Code
- New work plan item to analyze identified topics/policies for a discussion with City Council → City Council can direct reach code

POLICY ALTERNATIVES

If Option Two is directed, one or more of the following policies/concepts can be directed for further research and discussion:

2.A. All-Electric New Buildings

2.B. Photovoltaic (PV) Systems Required on New Nonresidential Buildings

2.C. Increase Energy Performance Requirements for New Buildings

2.D. Other Energy Efficiency Regulations

POLICY ALTERNATIVES: 2.A. & 2.B.

2.A. All-Electric New Buildings

- Require all-electric fuel sources for new buildings, with no gas appliances and plumbing
- *Recommended by the Sustainability Task Force*

2.B. Photovoltaic (PV) Solar on New Nonresidential Buildings

- Require PV on new nonresidential buildings
- Options under this could include requiring:
  - minimum solar size capacity
  - solar size based on roof area
  - solar size based on projected annual electric usage

POLICY ALTERNATIVES: 2.C. & 2.D.

2.C. Increase Energy Performance Requirements for New Buildings

- Require higher efficiencies for mixed-fuel buildings
- More stringent energy storage and higher renewable energy standards

2.D. Other Energy Efficiency Approaches

- Cool or sustainable roofs
- Green roofs
- Solar or electric heat pumps for pool and water heating
- Green building certification or equivalency

FUTURE WORK PLAN ITEM

- Step 1: Further Research and Discussion
  - Research and analyze potential policies under directed topics
  - Presentation to City Council, discussion, and potential code ordinance direction
- Step 2: If City Council directs ordinance, review available model ordinances and customize to the needs of the City
  - Collaborative development involving regulatory agencies, utility providers, local governments, and energy policy agencies
  - Collaborative outreach with agencies to the building and construction community
  - City Council considers ordinance adoption

BUILDING CODE CYCLE

- Should Council direct new work plan item to increase energy efficiency of new buildings, timing would coincide with next update of CA Building Codes:
  - Fall 2022: Next update of the State Building Codes
  - Requires adoption by City Council
  - Requires approval by the California Energy Commission
  - January 2023: Implementation
- Administered as part of the normal building permit process

POLICY ALTERNATIVES

City Council discuss and provide direction regarding potential requirements to increase energy efficiency of new buildings.

1. Does City Council support increasing energy efficiency for new buildings above minimum state requirements?
   YES or NO

2. If YES, identify **one or more** policies to increase energy efficiency:
   - *2.A. All-Electric New Buildings*
   - *2.B. PV Solar Required on New Nonresidential Buildings*
   - *2.C. Increase Energy Performance Requirements for New Buildings*
   - *2.D. Other Energy Efficiency Regulations*

QUESTIONS?