

# **Fiscal Year 2020 Annual Energy Report Review**

Energy Efficiency & Sustainable Energy Board  
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# Annual Energy Report Summary

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- Building Management (Don Perrin)
  - State of NH Energy Goals
  - Building Energy Consumption & Costs
  - Legislation Changes
  - Energy Conservation Plan
- Fleet Management (Becky Ohler)



# State of NH Energy Goals

## Executive Orders and Legislation

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### Current

- **Executive Order 2016-3** - An order for state government to continue to lead-by-example in energy efficiency, conservation, and renewable energy.
- **Senate Bill 73** (2010 Session) - Requiring the state government to reduce energy use per square foot

### Previous

- **Executive Order 2004-7** - An Order improving the energy efficiency of State Government.
- **Executive Order 2005-4** - An Order for State Government to Lead-by-Example in Energy Efficiency
- **Executive Order 2011-1** - An Order for State Government to Continue to Lead-by-Example in Energy Efficiency.

# State of NH Energy Goals

## Executive Order 2016-03

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- Building Fossil Fuel Use Energy Intensity Targets (KBTU/sq. ft.) compared to a 2005 baseline
  - 30 percent below FY2005 levels by 2020
  - 40 percent below FY2005 levels by 2025
  - 50 percent below FY2005 levels by 2030
- State Passenger Vehicle Fleet GHG Emissions Targets (Metric Tons)
  - 30 percent below FY2010 levels by 2030

# Building Energy Consumption

## Fossil Fuel Determinations

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- **All energy use tracked in kBTUs (Apples to Apples)**
  - Primary Energy Sources (e.g., oil, NG, biomass)
  - Secondary Energy (e.g., electricity, steam)
- **Determining total energy use is easy (Simple Addition)**
- **Determining fossil-fuel energy use has varied in complexity**
  - Count primary fossil fuels (1:1)
  - Calculate secondary fuels based on share of fossil fuels in primary energy mix
    - For default service: New England ISO-NE Mix

# Building Energy Consumption

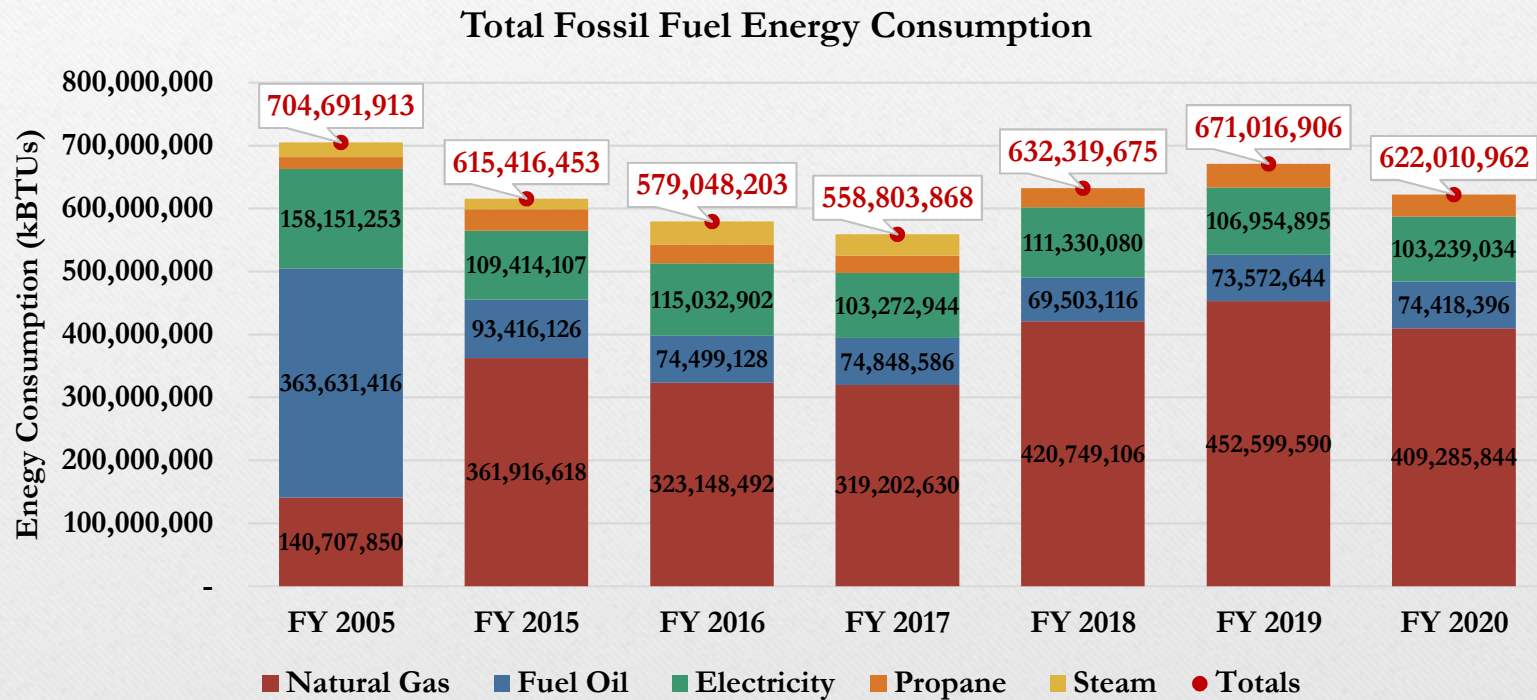
## State of NH Energy Consumption (FY 2005 & FY 2020)

	Total Square Feet	Total kBtus Used	Fossil Fuel kBtus Used	Total Cost	Cost Use	EUI	FF EUI
					Dollar Per Sq Ft	kBtus Per Sq Ft	Fossil Fuel kBtus Per Sq Ft
FY2005	6,890,482	859,178,223	704,691,913	\$ 13,946,660	\$ 2.02	124.7	102.3
FY2020	7,721,972	795,984,488	622,010,961	\$ 14,914,768	\$ 1.93	103.1	80.6
% Change	12.1%	-7.4%	-11.7%	6.9%	-4.6%	-17.3%	-21.2%

**Since FY2005, the State had avoided more than \$45 million in energy costs.**

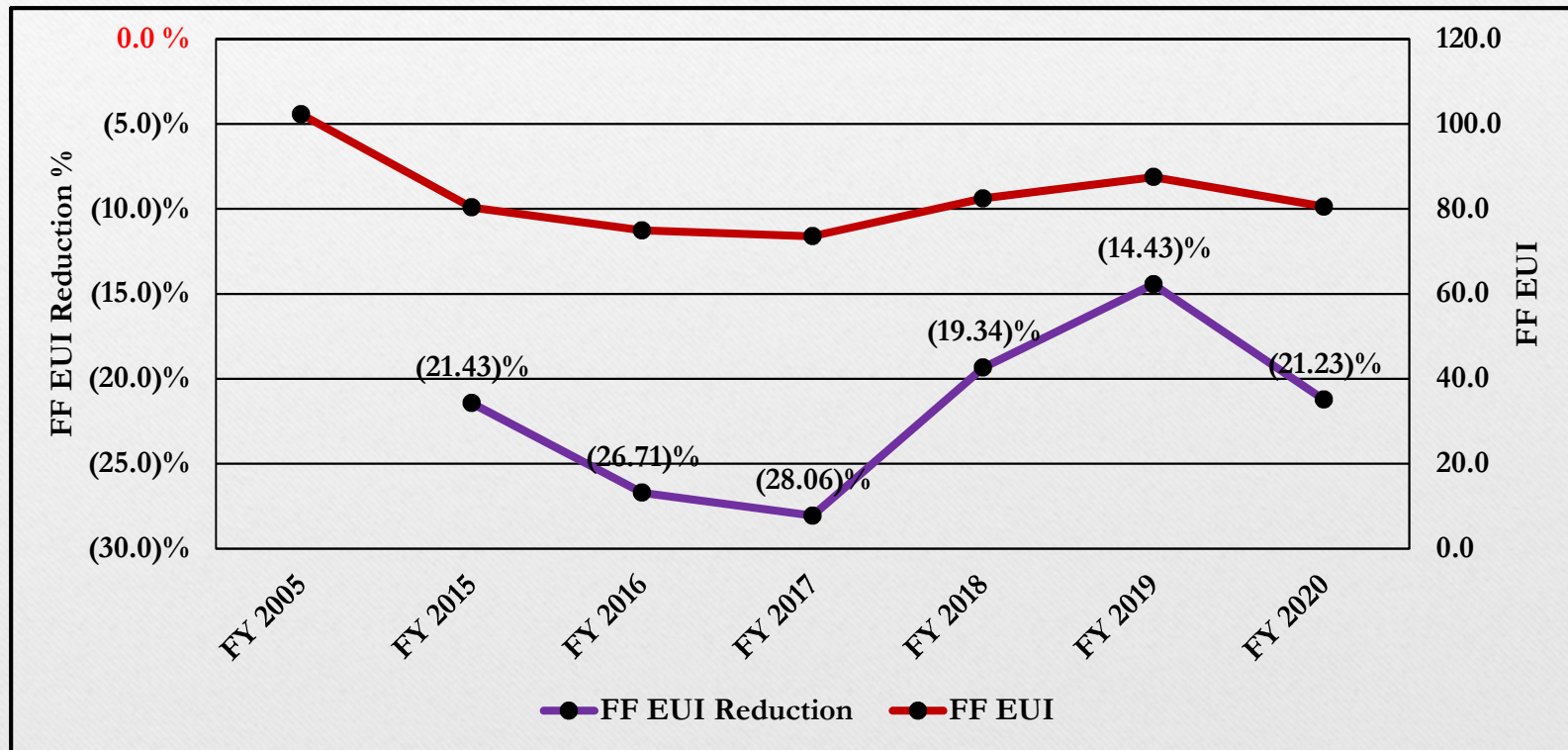
# Building Energy Consumption

## State of NH Fossil Fuel Energy Consumption



# Building Energy Consumption

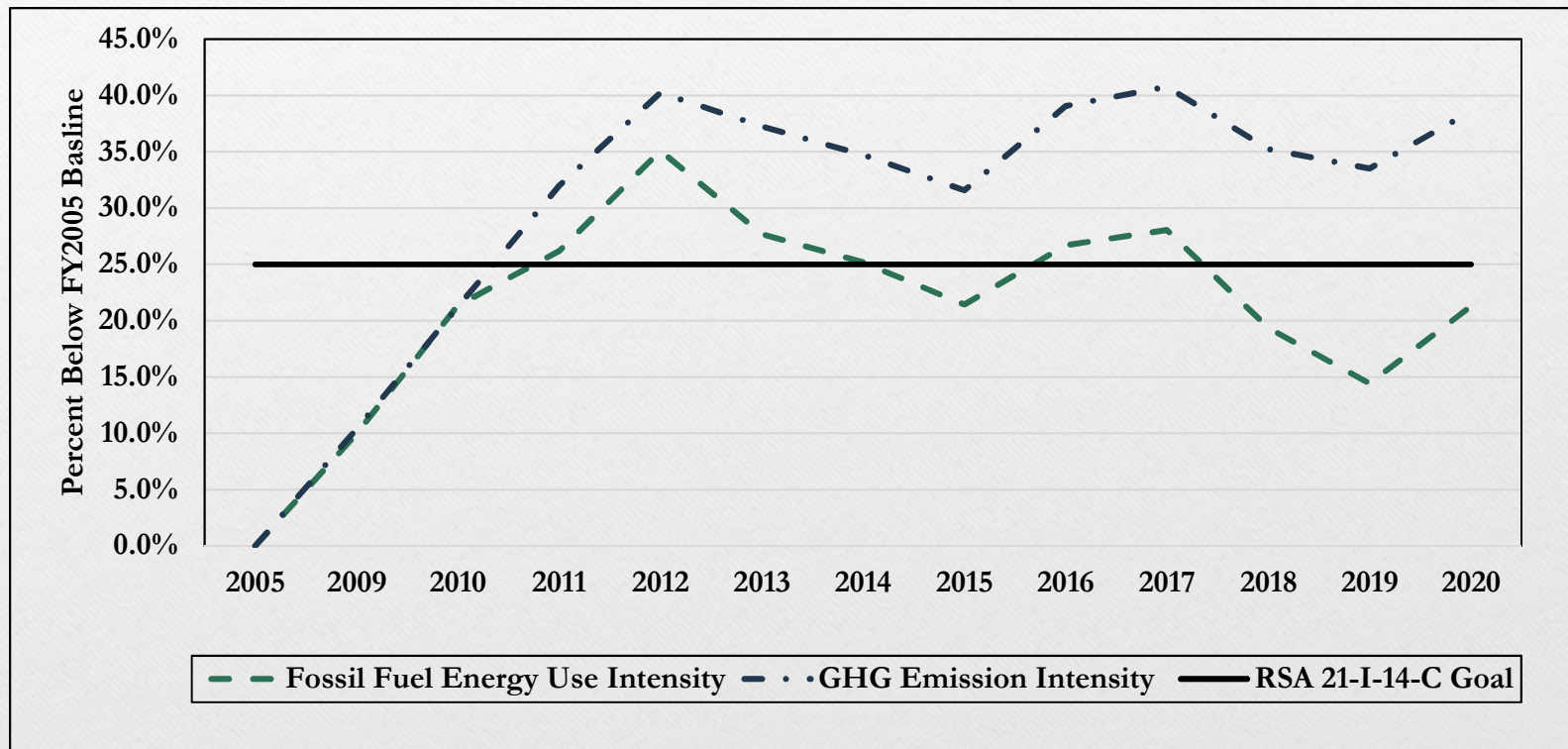
## State of NH Fossil Fuel Energy Use Intensity





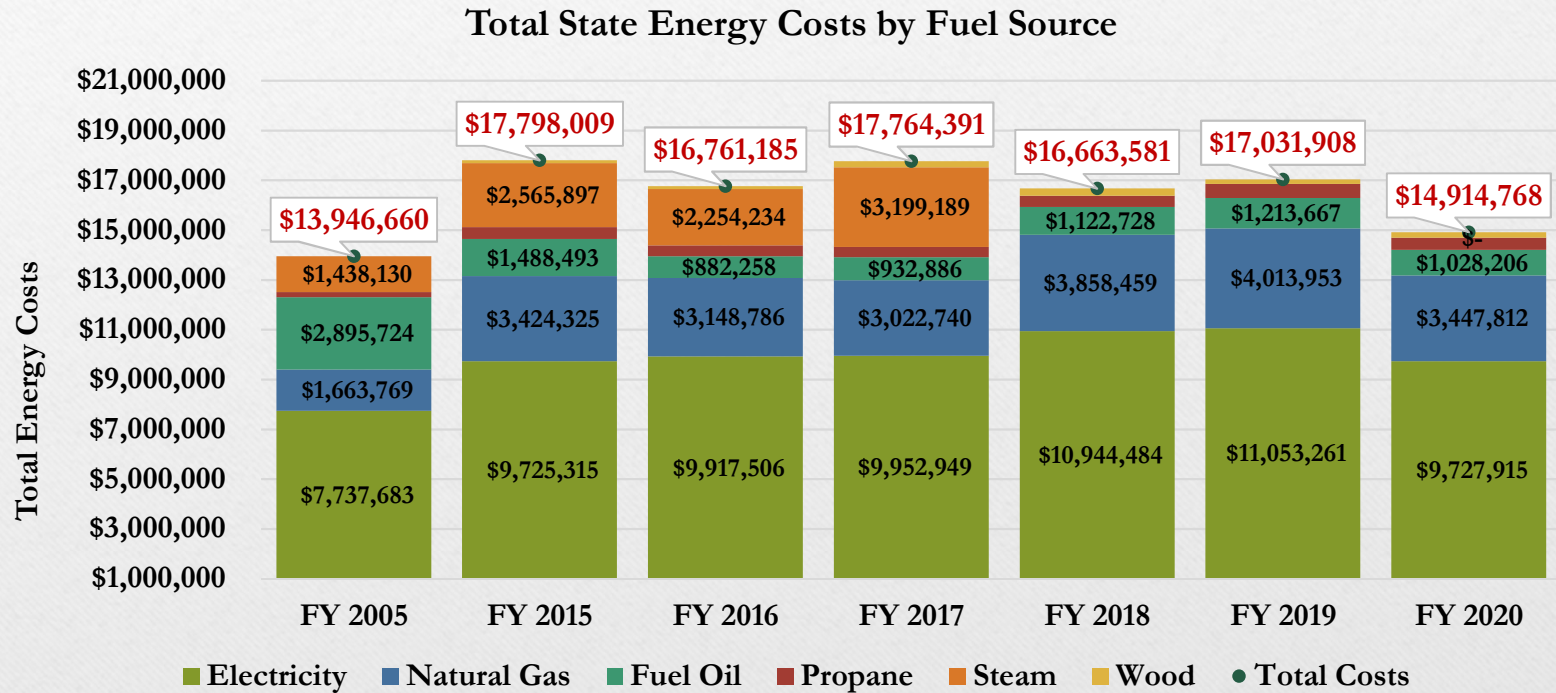
# Building Energy Consumption

## State of NH GHG Emission Intensity



# Building Energy Consumption

## State of NH Energy Costs By Fuel Source



The State was able to reduce its overall utility costs by \$2.1 million in FY2020 over FY2019.

# Legislation Change Update

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- **SB 462 / Omnibus HB 1245 (2020)**
  - Changes made to the following RSAs
    - RSA 21-I:19-a Energy Management Measures; State Policy
    - RSA 21-I:19-b Definitions
    - RSA 21-I:19-d Energy Performance Contracting
    - RSA 21-I:17-b Purchase of Electricity by Competitive Bidding
    - RSA 21-I:19-e Energy Cost Savings Distribution
    - RSA 21-I:19-f Strategic Energy Investment Fund

# RSA 21-I:19-e Energy Cost Savings Distribution

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- Prior to the change, the balance in an agency's energy cost budget would revert to the general fund at the end of a fiscal biennium
- Now, 50 percent of the general funds remaining in an agency's energy costs budget at the end of each biennium revert to the State Energy Investment Fund (SEIF)
- Why is the change important
  - The intent is to incentivize reduction in energy consumption through behavior change, reducing energy costs and saving tax dollars
  - Increase the funding set aside for energy efficiency projects, which would result in additional avoided energy costs

# Energy Conservation Plan

## Summary of Completed Projects

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14 of 16 Departments submitted energy conservation plans that calculate energy savings for 64 completed energy efficiency projects\*.

Total cost: **\$8.6 million**

Energy cost savings: **\$700,000** annually

Simple payback: **12.2** years



# Energy Conservation Plan

## Summary of Efficiency Funding

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**\$0** in capital funds to SEM office for energy efficiency projects for the fiscal biennium 2020/2021.

**\$130K** Federal grant through OSI

**19** projects across 13 agencies

- Estimated **\$31,000** annual avoided energy costs
- **4.2** year Return On Investment
- **\$465K** in lifetime avoided energy costs



# Energy Conservation Plan

## Summary of ESPC

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- **In FY 2020, two Energy Saving Performance Contracts (ESPC) underway.**
  - Concord/State Office Park South: Twenty-eight (28) buildings located in downtown. (M&V phase)
  - Seacoast region: 21 buildings, 5 Agencies (construction phase)



# Energy Conservation Plan

## Summary of Agency Priorities

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- **Top priority EE projects for agencies:**
  - Replace HVAC systems and controls
  - Upgrade lighting to LED (interior and exterior lighting)
  - Replace windows/doors
  - Solar P.V. systems
  - Circulation pump upgrades
  - Building envelope (air sealing/insulation)



**Estimated cost for prioritized measures: \$21M**

**Return on investment: 8.3 years**



Questions?

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