



Sustainability @ UCSB Campus

Climate Change Action at UCSB

**Campus Sustainability
December 2007**

Sustainability at UCSB

- UCSB is in the process of registering 2007 emissions
- 4th year of registering emissions
- UCSB is dedicated to meeting goals of UCOP and AB32:
 - 2000 level emissions by 2010
 - 1990 level emissions by 2020
 - 80% fewer emissions than 1990 by 2050 (AB32 only)
- UCSB is in the process of creating a climate action plan using the data in this presentation



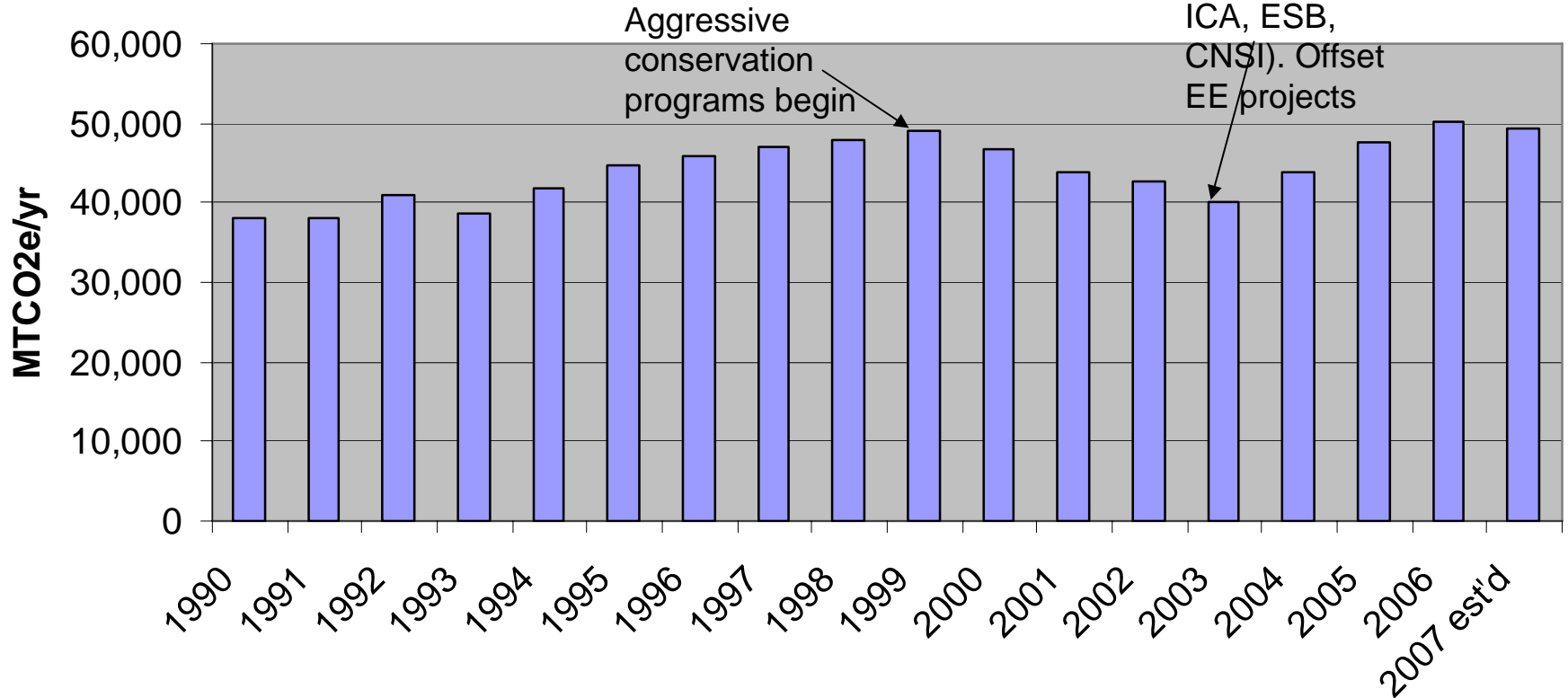
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- Climate action plan will lay out concretely UCSB's goals for reducing GHG emissions and how it plans to achieve those goals
- UCOP expects every campus to have a plan by the end of 2008
- Meanwhile, UCSB is working with consultants to develop a Strategic Energy Plan to secure funding for conservation for the next decade



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UCSB Historic Emissions



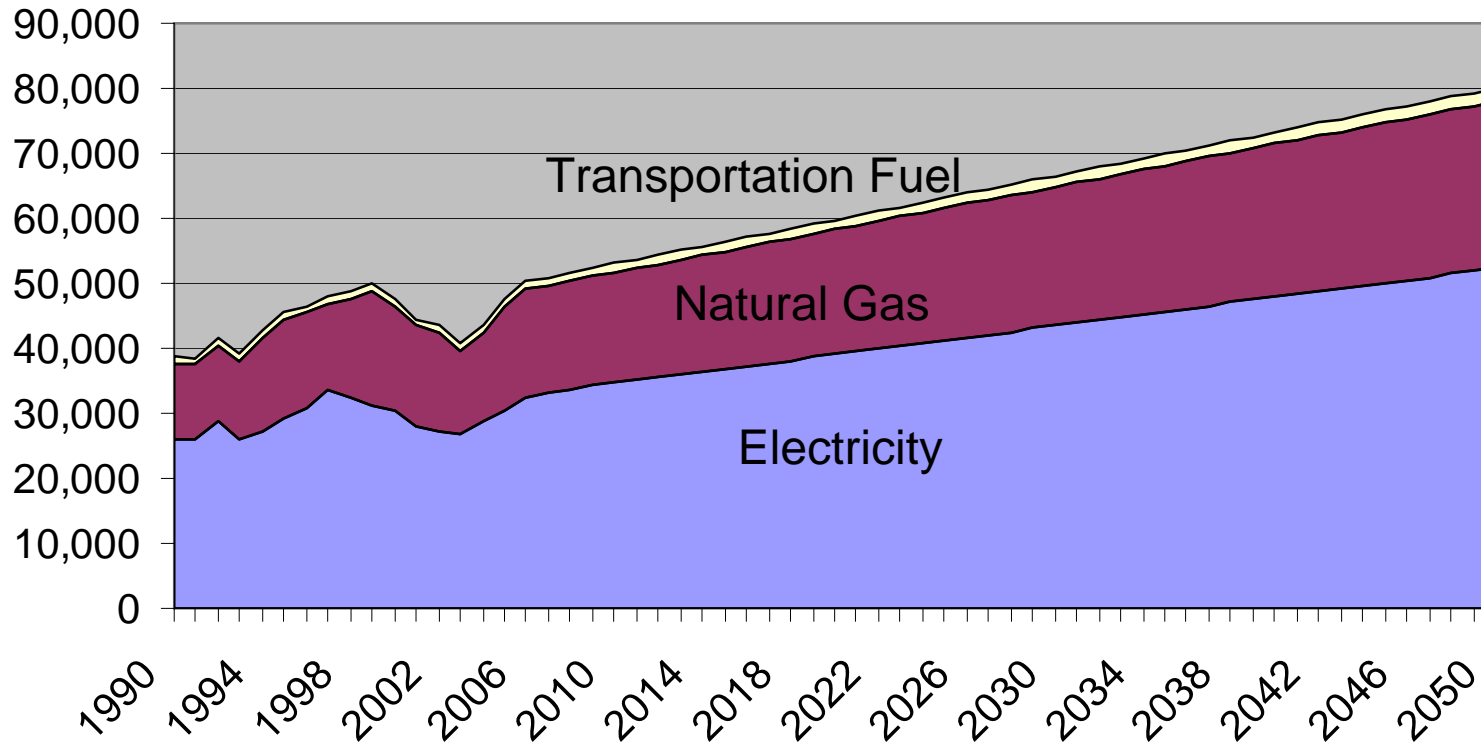
Energy intensive buildings come online (RCII, ICA, ESB, CNSI). Offset EE projects

Aggressive conservation programs begin

*Includes campus specific emissions: electricity, natural gas, and fuel usage for campus-owned and leased facilities. Commuting and air travel are accounted for separately

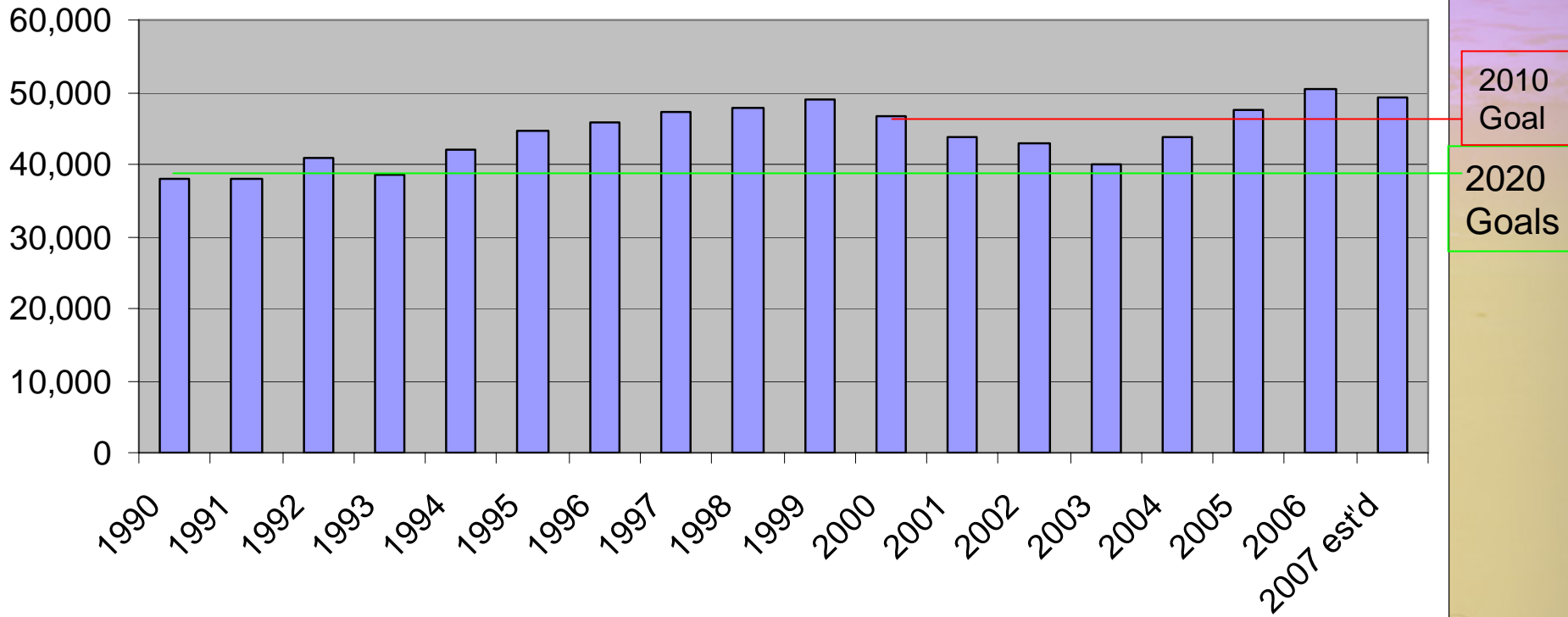
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Emissions by Source

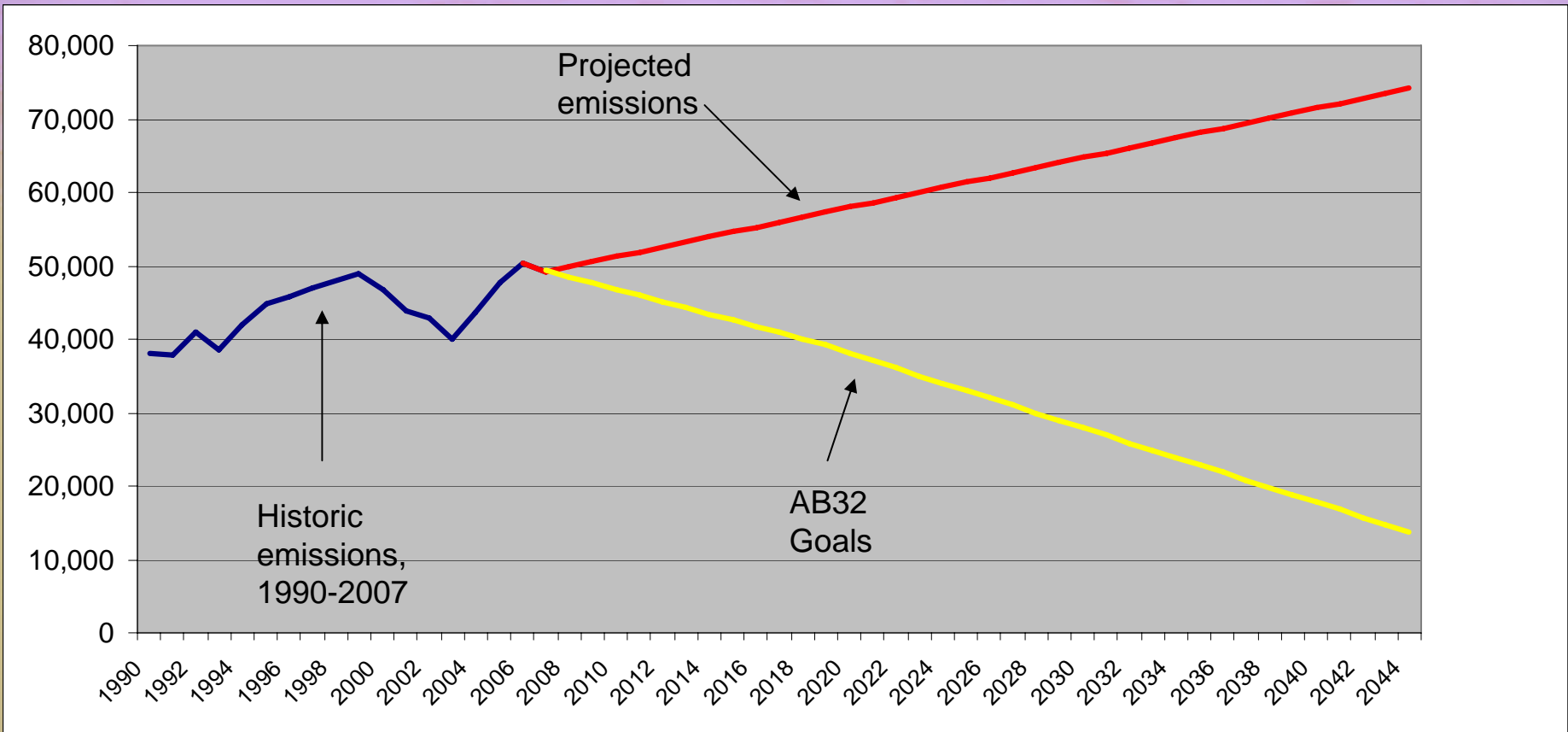


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UCSB Historic Emissions



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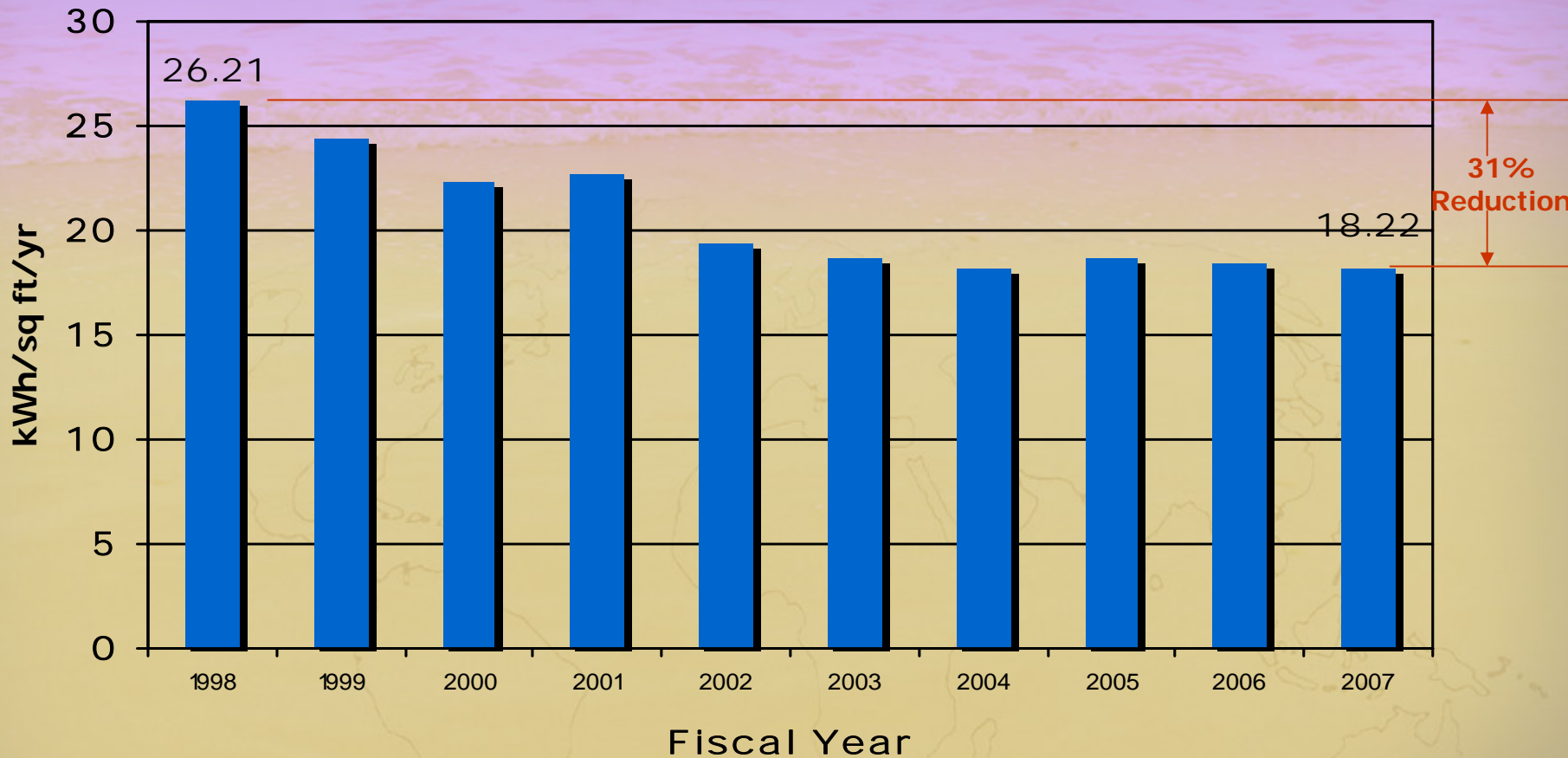
- Climate action will cost \$ *upfront*, but will likely have positive NPV
- UCSB's innovative team of engineers may never run out of projects
- *The analogy of picking the low-hanging fruit is a red herring. Technological advances, end-user creativity and rapidly increasing energy costs create additional low-hanging fruit constantly. – Aaron Klemm, CSU system*

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- The Energy Team has demonstrated success in the past
- Conservation projects completed between 2000-2006 had a payback of 1.6 years, an NPV of over \$10M, and offset 4,200 metric tonnes per year
- 2007-2009 projects will have a payback of 2.6 years, an NPV of over \$5M, and offset 2,800 metric tonnes per year
- The team is gearing up for an increase in UC/CSU/IOU Partnership funding for 2010. Most funding goes to conservation, some investment for renewables

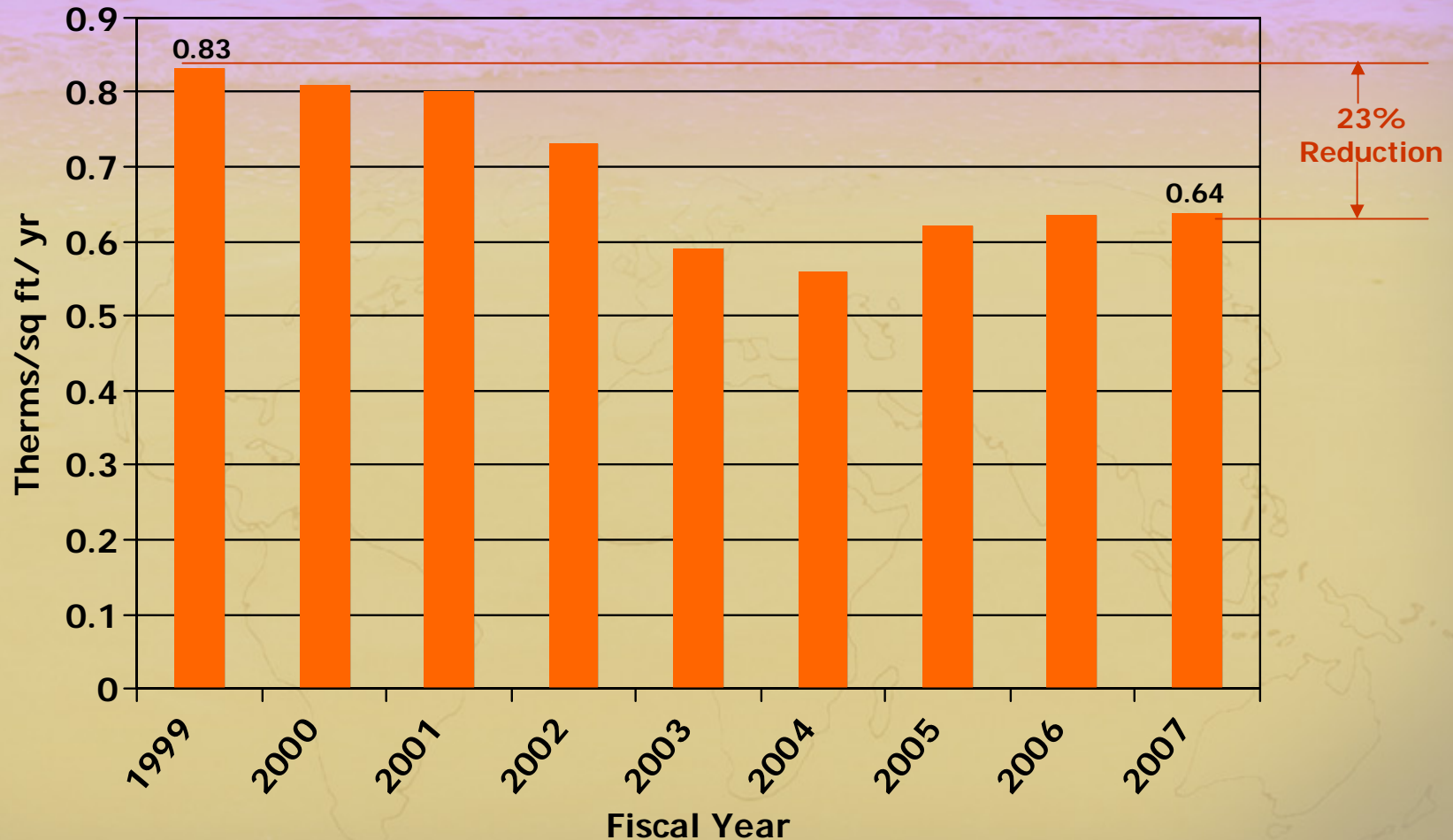
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Electrical intensity: kWh/sq ft/yr



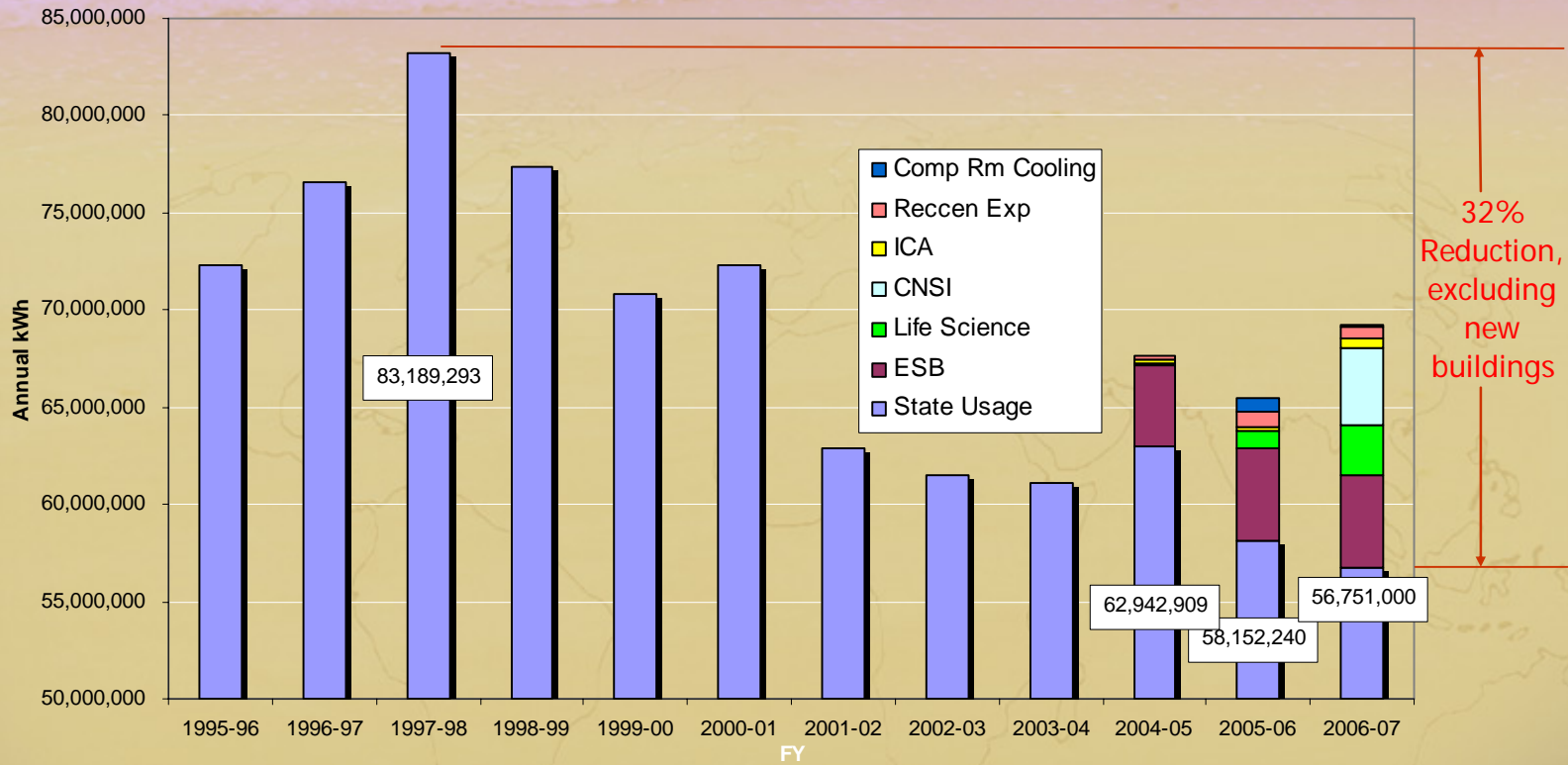
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Net State Natural Gas Usage at Fiscal Close



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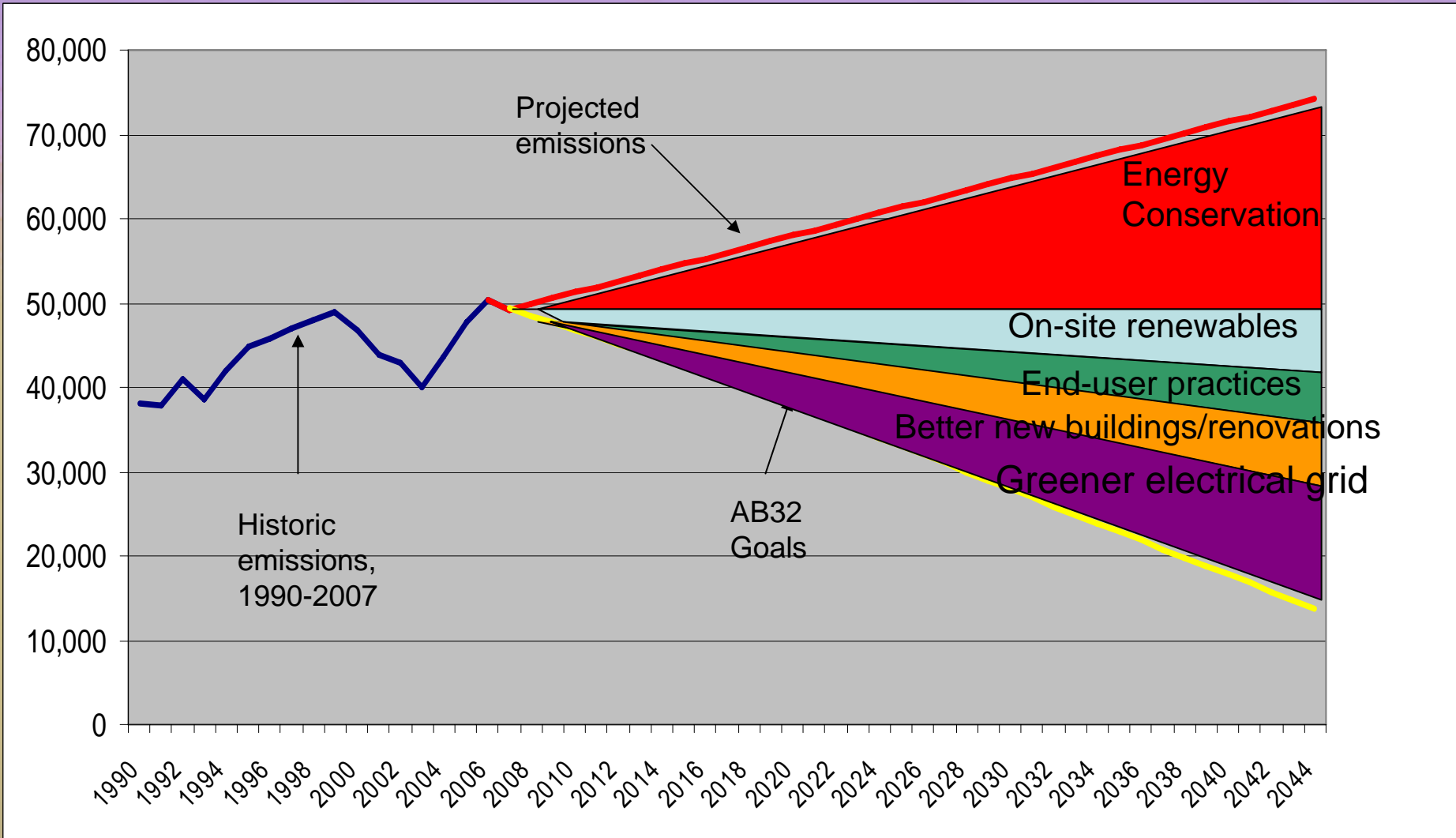
State Building Elecal Usage and the Effect of New Buildings



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- Because of past successes, bold goals are attainable, but only with dedication and investment necessary to offset 20,000 MTCO₂ by 2020 and 70,000 MTCO₂ by 2050
- What's the best way?
 - Cost-effectiveness remains a key
 - Build on previous successes: conservation
 - Build better buildings: LEED and Title 24 by 20% or better
 - Implement on-site renewables whenever possible.
 - End-user education through LEED EB, other programs
- What this *might* look like:

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Taking action to stop climate change is necessary and relevant to our mission as a University. If done correctly, climate action should yield net positive financial value, while reducing pollution, reducing our dependence on foreign fuels, and transforming campus buildings into living laboratories for an energy efficient future.

Thanks for your support!

Questions?