

# Energy Analysis Software for Nonresidential Buildings

California Energy Commission  
Staff Workshop

September 23, 2010



High Performance Buildings & Standards Development Office  
Efficiency & Renewable Energy Division

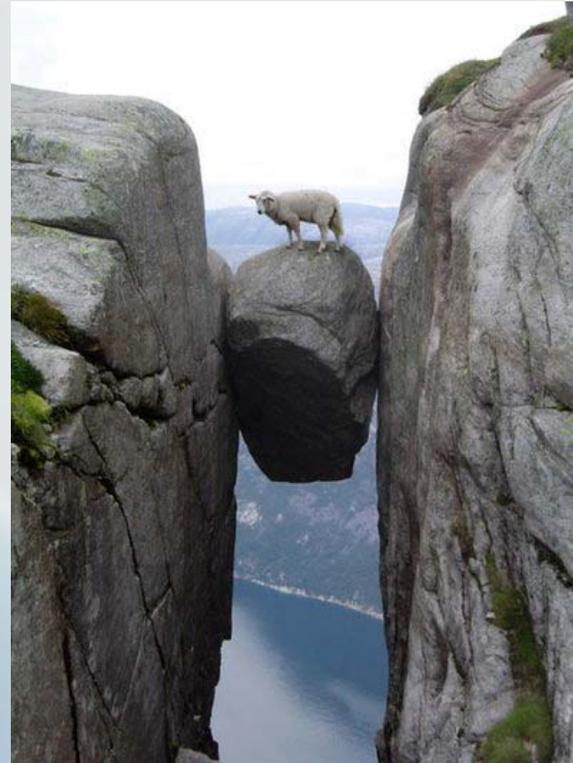
# Workshop Objectives

- ❖ Introduce CEC Staff long term vision for software development, updates & availability
- ❖ Explain current status, plans & schedule for 2011 Title 24 nonresidential software
- ❖ Explain plans for upcoming technical support RFP
- ❖ Discuss options & identify issues



# Background

- ❖ CEC support for public domain energy analysis programs
- ❖ CEC provision of compliance software
- ❖ Current limitations



# The Long View

Zero Net Energy Buildings

Efficient Existing Buildings

New  
Construction  
Programs

Title 24  
Standards

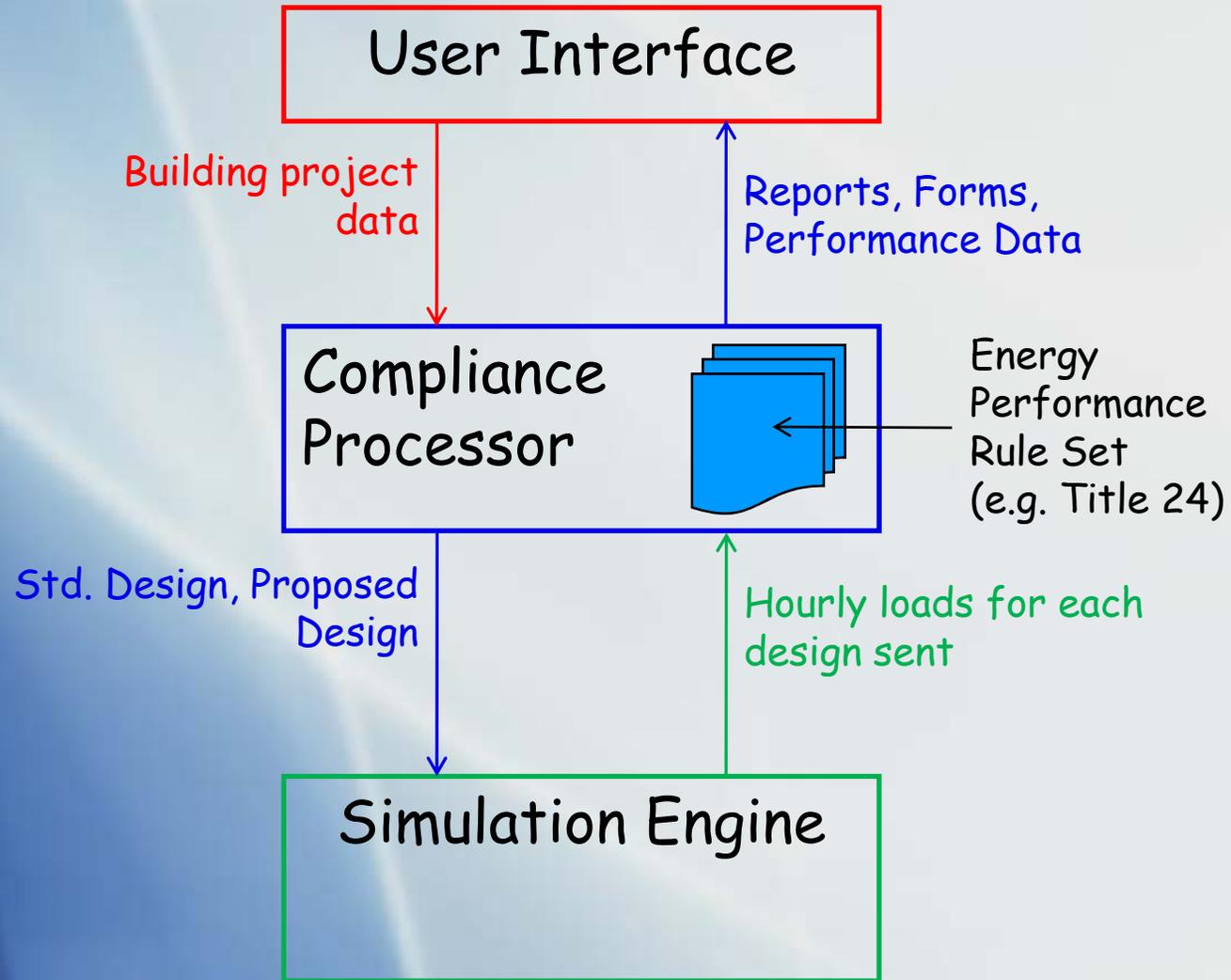
Green  
Building  
Programs

Rating &  
Labeling  
Programs

Collaborative Software Platform & Environment

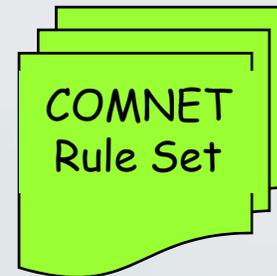
Current CEC Needs

# Public Goods Software Architecture



# Energy Performance Rule Sets

- ❖ Computer Processable Performance Rules
- ❖ Create, modify & document using controlled vocabulary and logical operators
- ❖ “Lock” rule set for energy policy deployment



“BEARS” = Building Energy Asset Rating System

# Public Goods Software Consortium

- ❖ Collaborative group to develop, test, document, support energy simulation software and special function processors / applications for public good clean energy purposes
- ❖ Provide software under a Lesser General Public License (or equivalent)
- ❖ Workforce development is a critical component



- Give young energy analysts & software developers a career path
- Sponsor student projects relevant to achieving our energy policy goals

# Public Goods Software Consortium

## ❖ Collaboratively manage and make available:

- Software applications for Standards, rating & labeling programs, utility efficiency programs, general energy analysis
- Controlled vocabulary, data models, data exchange schema
- Building & energy system prototypes, weather & solar data, energy cost data (e.g. TDV)
- Rule sets, application code, energy analysis projects
- Documentation & tutorials



# Current Activities

- ❖ Zero Kit Software Architecture
- ❖ Building Energy Standards Modeler & Controlled Vocabulary
- ❖ EnergyPlus Interface
- ❖ COMNET
- ❖ 2011 Rule Set Development
- ❖ 2011 Title 24 Work Group & Web Site
- ❖ Compliance Data Exchange & Archive



# Plans for CEC Technical Support

## ❖ *High Performance Buildings* Technical Support RFP

- 2011 Title 24 “public domain” software completion
- Title 24 compliance data repository
- Title 24 exceptional analysis
- **HPB** consortium support & software platform development
- 2014 Standards Update – research key topic areas



# Plans for CEC Technical Support

- ❖ Budget: ~ \$1,500,000
- ❖ Term: Q2, 2011 – Q2, 2014
- ❖ Schedule:
  - Release RFP – November, 2010
  - Proposals Due - January, 2011
  - Notice of Proposed Award – February, 2011
  - Contract Start – May, 2011



# Plans for 2011 Title 24 Software

## ❖ Scope

- Compliance Processor
- 2011 Title 24 Nonresidential Rule Set
- Building Model data exchange schema
- Compliance data exchange schema

## ❖ Approach

- EnergyPlus for simulation engine
- Lesser General Public License, or equivalent for Standards application software

## ❖ Schedule

- May, 2011 – June, 2012



# Workshop Discussion

Send written comments to  
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