

MINUTES OF THE SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES.

The meeting was called to order by Chairperson David Corbin at 8:00 a.m. on March 13, 1997 in Room 254-E of the Capitol.

All members were present.

Committee staff present: Raney Gilliland, Legislative Research Department  
Mary Ann Torrence, Revisor of Statutes  
Lila McClafin, Committee Secretary

Conferees appearing before the committee:  
Dwight Perry, Lawrence Home Builders Association  
Karen France, Kansas Board of Realtors  
Janet Stubbs, Kansas Builders Industry Association  
Robert Hogue, Robert Hogue Construction  
Arthur Brown, Mid America Lumbermens Association  
Larry Holloway, Chief of Electric Rates, Kansas Corporation Commission

Others attending: See attached list

**HB 2361 - Concerning nongame, threatened and endangered species; relating to listing of and recovery plans for such species; allowing tax credits for certain taxes and assessments.**

Chairperson Corbin stated staff had called to his attention the fact that the amendment passed on March 11, Section 7 concerning adjusted gross income needed to be reconsidered. Senator Karr moved for the committee to reconsider their action. Senator Biggs seconded the motion. Motion carried. Staff distributed a copy of the proposed amendment and explained it. The amendment would allow for deduction of certain cost for state income tax purposes, but builds in the safeguards necessary to insure that they are not deducted twice (Attachment 1).

Senator Biggs moved to adopt the proposed amendment. Senator Karr seconded the motion. The motion carried. Senator Morris then moved HB 2361 be passed as amended. Seconded by Senator Huelskamp motion carried.

**Sub for HB 2140 - Energy efficiency new structures; standards for commercial and industrial structures; disclosure of certain information for residences.**

Dwight Perry, Lawrence Home Builders, supported the bill. There association believes that the energy efficiency in homes in Kansas should be market driven and not something that is dictated by the state. They opposed being forced to sign the non-compliance form and having it attached to the deed (Attachment 2).

Karen France, Kansas Association of Realtors, said they believe the state should not be in the business of dictating energy efficiency codes. Home buyer should be setting the standards of energy efficiency. The notice of non-compliance should not be placed on a deed. Deeds should only contain the minimum information necessary to transfer title to the property, and should not be weighted down with information about whether energy building codes have been met (Attachment 3). Ms. France responded to questions regarding the non-compliance forms attached to her testimony.

Janet Stubbs, Kansas Building Industry Association (KBIA) supported the bill. She said the KBIA has always supported adoption and enforcement of cost effective life-safety building codes and their enforcement by local units of government. In doing so they some times disagree with groups and agencies who profit from government intervention at the expense of the consumer (Attachment 4). Ms. Stubbs distributed testimony from Ron Burton, Vice President, National Association of Home Builders, supporting the bill (Attachment 5). Also distributed was a report from Dressler Consulting Engineers Incorporated on Energy Study and Economic Analysis of the CABO 1993 Model Energy Code (Attachment 6). She introduced Robert R.

CONTINUATION SHEET

MINUTES OF THE SENATE COMMITTEE ON ENERGY AND NATURAL RESOURCES, Room 254-E Statehouse, at 8:00 a.m. on March 13, 1997.

Hogue, President of RHCI, Topeka, KS.

Robert R. Hogue supported the bill and suggested that affordable housing is one of the main drawing cards Kansas has to offer prospective new residents. The energy code has caused an unwarranted expense for new home buyers, and will force people to stay in their less energy efficient older houses (Attachment 7). Mr. Hogue responded to questions regarding who does the inspections and who fills out the forms. He explained how the extra insulation would increase the cost, which in turn would increase the selling price and the assessed valuation that would result in higher property taxes.

Art Brown, Mid-America Lumbermen's Association, supported **HB 2140**. Chairperson Corbin asked that he submit written testimony. He said he would do so.

Larry Holloway, Kansas Corporation Commission said they were appearing as neutral conferees they suggested that section 2 of the bill be amended to also require the builder to disclose the following: **“Overall expected energy usage of the house and expected energy usage of an identical house built to meet the minimum requirements of the 1993 CABO model energy code.”** He thought this change would give the new homeowner a method for comparing the efficiencies of a new home similar to that currently provided on new appliances and automobiles. If that addition was made the commission would support **HB 2140** (Attachment 8). He responded to questions.

The meeting adjourned at 9:00 a.m.

The next meeting is scheduled for March 14, 1997.

**SENATE ENERGY & NATURAL RESOURCES  
COMMITTEE GUEST LIST**

DATE: 3-13-97

NAME	REPRESENTING
Steve Holshaw	Western Resources
Jerry Wittman	Topeka Area Builders Assn.
Bob Hoque	Kansas Building Industry Assoc
Larry McLaway	KCC
JOE DICK	KCK BPU
ED SCHAUB	WESTERN RESOURCES
Shari JACKSON	SPI
Jim Allen	KBIA
Tom Bruno	Allen & Assoc.
Woody Moses	Ks App. Prod. Assn
<del>Wright Perry</del>	Lawrence Home Builders
Robin Lehman	Lawrence Home Builders
Jim Ploger	KCC
KAREN FRANCE	Ks Assoc. of REALTORS
FRANK WIETHARN	FRANK WIETHARN HOMES THBA
JANET STUBBS	KBIA
M.S. MITCHELL	KBIA
Clint Riley	KDWP

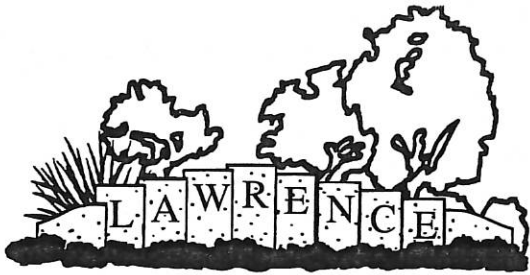
PROPOSED AMENDMENT TO H.B. 2361

Amend subsection (b) of K.S.A. 1996 Supp. 79-32,117 to read as follows:

“(b) There shall be added to federal adjusted gross income...

(viii) The amount of any ad valorem taxes and assessments paid and the amount of any costs incurred for habitat management or construction and maintenance of improvements on real property, claimed for deduction in determining federal adjusted gross income, to the extent the same is claimed as the basis for any credit allowed pursuant to section 6 and amendments thereto .”

*Sen Energy & Nat Res*  
*3-13-97*  
*attachment 1*



Lawrence Home Builders Association

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(913) 832-9492  
fax (913) 832-9494

March 13, 1997

TO: Senate Energy Committee

FROM: Dwight Perry, President  
Lawrence Home Builders Association

SUBJECT: Sub for HB 2140 -- Energy Efficiency of New Structures

Mr. Chairman and Members of the Committee:

My name is Dwight Perry and I am president of the Lawrence Home Builders Association. I appreciate having the opportunity to appear before you today in support of the Substitute for House Bill 2140.

Representative Tom Sloan of Lawrence offered the amendment to HB 2140 that was passed unanimously in the House Utilities Committee. It was also passed by a vote of 104 to 20 on the floor of the House. Our association supported Representative Sloan's amendment and believes that this is a fair and reasonable compromise for both consumers and builders.

The bill requires builders to provide written disclosure to buyers regarding insulation values, thermal properties for windows and doors, HVAC equipment efficiency levels, and water heating efficiency levels. It lets them make choices about additional energy-saving measures rather than having those measures forced upon them and their pocketbooks by MEC 93. This code attempts to regulate economics, not life or health safety issues. The level of energy efficiency in homes in Kansas should be market driven and not something that is dictated by the state.



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Attachment 2 2-1

The MEC 93 code is complicated and confusing, leaving many of us with uncertainty about whether we are in compliance. If we're in doubt, we are forced to sign the non-compliance form, which could give the impression that the house is of inferior quality in terms of energy efficiency when it is not. Since the code is hard to interpret, it will often result in placing liability on the builder, unnecessarily and for an indefinite period of time.

We urge you to vote in favor of the Substitute for House Bill 2140 and return this issue to local officials and the home-buying public.

Thank you.



## KANSAS ASSOCIATION OF REALTOR

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**TO:** THE SENATE ENERGY AND NATURAL RESOURCES COMMITTEE  
**FROM:** KAREN FRANCE, DIRECTOR, GOVERNMENTAL AFFAIRS  
**DATE:** MARCH 13, 1997  
**SUBJECT:** HOUSE SUBSTITUTE FOR HB 2140, ENERGY EFFICIENCY STANDARDS

Thank you for the opportunity to testify. The Kansas Association of REALTORS® strongly supports the legislation presented for your consideration. We believe this substitute bill is a reasonable compromise between the need for the consumers to know what energy efficiency options are available to them and the building industry's ability to deliver what the consumers demand at a mutually agreed upon price.

As we testified before this committee in February, you are being presented with two issues. The first issue is whether the state should be in the business of dictating the level of energy efficiency new homes have. The second issue is what that standard should be and how it can be enforced

We firmly believe the state **should not** be in the business of dictating energy efficiency codes. This is a market driven component of a home. Why not let the home buyer choose what level of energy of efficiency they can afford, rather than have the state set up an artificial building code standard that may or may not deliver the desired energy cost savings?

The homebuyer should be the person setting the standard of energy efficiency. From testimony presented by experts, there may be cheaper ways to achieve the same energy efficiency levels without using CABO MECH 93 specifications. The average projected cost of meeting the CABO MECH standards is at least \$1,300 in additional cost to the home purchaser. That forces that purchaser to come up with \$30-\$35 additional income per month in order to qualify for that mortgage. That is very difficult for most buyers to come up with, especially first time home buyers who are using every bit they have to get in to that first home. The energy savings they allegedly get do not make up for that additional income needed. Why not let them choose the level they can afford? This substitute bill lets a consumer shop for specific energy ratings of the homes builders are producing and make their own determinations, rather than having the state make the decision for them

We ask for your support of this bill. We remind you that, if this legislature does not act, the forms set in place by the KCC calls for the notice of non-compliance to be placed **on the deed**. (Forms are attached for your reference.) The notice of non-compliance should **not** be placed on a deed. Deeds should only contain the minimum information necessary to transfer title to the property, and should not be weighted down with information about whether any energy building codes have been met.

Additionally, my members are put in the position of potentially delaying the closing of a transaction while determining whether the disclosure form is needed for this particular property or not. We have to determine whether the home was "built" before January 24, 1997. Does this mean a building permit was issued, ground was broken or a sales contract was drawn.? My members ask, what have we done to the marketability of a home is we get the non-compliance form signed, only to find out it was unnecessary?

The system currently in place is an unacceptable interference with a real estate transaction. The bill before you sets up a reasonable alternative for providing the public with the information about energy efficiency which they need to make an informed decision about the purchase of a new home. We ask for your support.

*Sen Energy & Nat Res*  
*3-13-97*  
*Attachment 3*



# State of Kansas Residential Building Energy Efficiency Compliance Certification Form

(To be completed by builder)

Builder: \_\_\_\_\_

Building Address: \_\_\_\_\_

City: \_\_\_\_\_

The above builder certifies that the new residential building constructed at the above address either (check the appropriate block):

1) Does not meet the energy efficiency requirements of CABO MEC93 \_\_\_\_\_  
Attach builders disclosure form with owners signature.

- or -

2) Does meet the energy efficiency requirements of CABO MEC93 \_\_\_\_\_

Verify compliance method below:

a) Building is designed and constructed to CABO MEC93 (attach documentation such as NAHB consolidated worksheet) \_\_\_\_\_

b) Building is designed and constructed using prescriptive requirements table for the applicable climate zone (attach table and circle selected building components) \_\_\_\_\_

c) Building is designed and constructed using one of the trade off compliance options (attach compliance option sheet and circle selected option) \_\_\_\_\_

d) Building is designed and constructed using MECcheck software (attach printout of MECcheck evaluation sheet) \_\_\_\_\_

e) Building energy performance is verified by a qualified HERS rating equivalent to CABO MEC93 (attach HERS documentation) \_\_\_\_\_

f) Building complies to energy efficiency of CABO MEC93 by detailed system analysis method, per CABO MEC93 chapter 4 regardless of the use of renewable energy sources (attach documentation) \_\_\_\_\_

Builder's Signature/Date \_\_\_\_\_

Return this form to your local utility





**State of Kansas**  
**Residential Building Energy Efficiency Compliance Certification Form**

**Declaration of Self-Exemption and Non-Compliance**

Date: \_\_\_\_\_

\_\_\_\_\_, builder of record of the residential dwelling unit known as \_\_\_\_\_ hereby exercises his or her right to exempt said residential building from all requirements of the Kansas Corporation Commission's residential building energy efficiency standards, as set forth in the Commission's order in docket number 190,381-U.

Said builder hereby acknowledges that such home may not qualify for certain current and future federal mortgage programs, including those promoted by the Veterans Administration, Federal Housing Authority and Farmers Home Administration, and Housing and Urban Development agencies. Builder also acknowledges that such home may use more energy, and may therefore experience higher electric and/or natural gas utility bills, than a home constructed to meet the Commission's adopted energy efficiency standards.

Said builder also certifies that a signed copy of this form will be provided to the buyer or any agent offering said house for sale for first time occupancy, and that all such agents shall be instructed to provide a copy of this form to all prospective home buyers prior to acceptance of any offer to purchase said dwelling unit. Said builder further certifies that a copy of said form shall be attached to and made a part of the recorded Deed for said property at the time of sale.

\_\_\_\_\_  
Builder Date

\_\_\_\_\_  
Owner Date

Return this form to your local utility

TESTIMONY  
to  
SENATE ENERGY & NATURAL RESOURCES  
March 13, 1997

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE:

My name is Janet Stubbs appearing today for the Kansas Building Industry Association in support of Substitute for HB 2140. Robert Hogue, an engineer and Topeka builder, is also present to answer the technical questions you might have.

As you are aware, this is not the original proposal made by the KBIA as a solution to the problems we believe are caused by the KCC adoption of MEC 93. However, when approached by members of the House Utilities Committee with a revision to that proposal, we worked with them to prepare an extensive and complete checklist of the energy efficient measures and equipment utilized in the house being considered for purchase by a prospective buyer. It is our belief that most builders do this now and, if they do not, they should.

You heard the testimony given by Mr. Burton, National Association of Home Builders Vice President in the Construction, Codes and Standards Department when he appeared on February 4. It is for these reasons that we continue to oppose the continuance of MEC 93.

Since there has been some confusion over the requirements of the Energy Policy Act of 1992 (EPACT), we have attached a summary of the provisions that affect single family housing. This was furnished by NAHB.

Please let me reiterate some points from Mr. Burton's testimony. First, the leadership of KBIA does not oppose energy efficiency construction in new homes or commercial structures. We believe most consumers demand such construction now. Those who do not already know the questions to ask will be made more aware and able to make comparisons because of the checklist requirement. We believe the positive effect of the checklist proposed by Sub. For HB 2140 is twofold. It makes the purchaser more cognizant of the energy features of the structure AND reminds the builder to inform the customer of features which the builder takes for granted.

In custom built homes, the consumer makes many of these decisions. In speculative built homes, this provides an information sheet for the consumer.

Neither do we oppose use of adequate insulation or blower door testing at the consumer's initiative.

We continue to be confident in our statement that there is a lot more to the construction of an energy efficient house throughout construction than attaching insulation to the basement walls after completion, which our experts believe is the primary difference between MEC 93 and the current practices.

The major opposition to this legislation in Kansas is the same as in other states. It comes from groups

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Attachment 4*

*4-1*

which will benefit, or hope to benefit, either financially or territorially from the requirements of compliance with MEC. The requirement to insulate unfinished basement walls means significant dollars out of the pockets of the consumer, the home buyer--not the builder. The independent study we commissioned by an independent engineering firm with offices in Overland Park, Florida and Springfield, Missouri, indicates this requirement will not reward the homeowner through energy savings as has been alleged. It will take longer to reach a break even point than the average person stays in their home according to this study of 7 different house plans located in 4 different cities in Kansas.

In short, insulation of basement walls required by MEC for Kansas is good for the insulation industry but it does not encourage better air infiltration techniques which are more cost effective for the consumer.

Mr. Chairman, the KBIA is an association comprised of member companies which in some way or other contribute to the construction of residential or light commercial structures. Every effort has been made by some conferees to paint these companies as businesses out to cheat the customer for their own monetary gains. Just as with any industry or profession, the construction industry has individuals who are not interested in the satisfaction and well being of anyone but themselves. The Kansas Building Industry is not proud of the people who give the industry a black eye. However, our Association attempts to police the membership and we do not believe we are unique in comparison with other groups which also fit the definition of "special interest" group. We will continue to attempt to protect the future potential purchasers of homes by speaking out against costly, unnecessary laws and regulations which increase the cost of home construction thus pricing some potential buyers out of the market. Those statistics were given you by Ron Burton when he appeared.

Implementation of MEC has no effect on the issue of construction standards and is a separate subject with different solutions. Successful builders have good references to furnish potential buyers. These same builders continually strive to use the latest building technology and design to set their product apart from their competitors. The marketplace has worked well to provide for energy savings in home construction. We continue to believe that it is the home builder responding to the home buyers desire for a more energy conserving product that has cut the energy use of homes in half over the past 25 years.

Substitute for HB 2140 responds to the request by one conferee who said that consumers wanted to be able to verify what energy measures were in the home and, therefore, supported MEC 93 so the consumer could inspect the verification of compliance filed at the utility. Since these records have been determined not to be open records available for inspection, the compromise contained in Sub. for HB 2140 meets this request also.

In previous hearings there was testimony offered by the opposition regarding the Building Codes Effectiveness Grading Schedule implemented by the insurance companies on communities. The statements suggesting that if Kansas does not have a state energy code, property insurance rates will be increased, is extremely misleading. Do insurance companies insure against excess energy usage? The system was implemented to adopt and enforce codes which assist in mitigation against natural

disasters such as hurricane Andrew.

In conclusion, we support the bill unanimously approved by the House Utilities Committee and by the Committee of the Whole on a vote of 104 to 20. The KBIA has always supported adoption and enforcement of cost effective life-safety building codes and their enforcement by local units of government. Our goal of providing sound affordable housing for prospective home buyers often means disagreement with groups and agencies who profit from government intervention at the expense of the consumer. Insulation, just as other features of a home, can be done by the homeowner, IF THEY FEEL IT IS WISE AND AFFORDABLE.

This is not a political party issue or a labor vs. management issue. Jobs will not be lost if this bill is passed. Sub. HB 2140 is a common sense, consumer oriented solution and we urge favorable action by this Committee.



**NAHB**  
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OF HOME BUILDERS

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REGULATORY & LEGAL AFFAIRS DIVISION  
CONSTRUCTION, CODES & STANDARDS DEPT.

RON BURTON  
Asst. Staff Vice President

**FAX MEMORANDUM**

TO: Janet Stubbs, Kansas BIA  
FAX #: ~~913-233-9876~~ 913-267-2959  
FROM: Ron Burton *RM*  
DATE: February 24, 1997

TOTAL # OF PAGES (Including this cover sheet): 8

RE: EPACT Summary

Janet:

Attached is the summary of the Energy Policy Act of 1992 (EPACT) that we discussed. Please note that this summary touches all the provisions that affect single family housing. The most important provisions - those that can affect our membership the most - are in bold. The part that is impacting you right now is the first bullet on page 2 - the state's requirement to reevaluate its energy code in light of DOE's determination that a new MEC edition provides for more energy efficiency.

If you have any questions, please call me as always.

*Sen Energy & Nat Res*  
*3-13-97*  
*Attachment 5*



**NAHB**  
NATIONAL ASSOCIATION  
OF HOME BUILDERS

SUMMARY OF ENERGY POLICY ACT OF 1992

Prepared by NAHB staff for the NAHB Energy Committee at its meeting at the NAHB Annual Convention in Las Vegas, NV on February 17, 1993.

The following summary of the Energy Policy Act of 1992 concentrates only on the sections of the law that affect one- and two-family dwellings and low-rise multifamily structures. The effective date of this law is October 24, 1992.

**TITLE I - ENERGY EFFICIENCY**

**Subtitle A - Buildings**

**Section 101 - Building Energy Efficiency Standards:**

- Amends Title III of the Energy Conservation and Production Act of 1976 (as amended in 1981).
- Recognizes "voluntary building energy codes" such as CABO/Model Energy Code and ASHRAE Standard 90.1.
- Eliminates the requirement for DOE to develop proposed voluntary performance standards for new residential buildings.
- Requires (within 2 years) each state to certify to DOE that it has reviewed its residential energy code and determined whether revisions in its code are appropriate to meet or exceed the 1992 CABO/MEC. This review process requires a public hearing.
- Provides that each state may revise its code to meet or exceed the '92 CABO/MEC OR may decline to do so. However, if the state declines to make such revisions, it must submit its reasons to DOE and this report will be made public.

- Requires DOE to monitor CABO/MEC and when revisions are made that DOE determines would improve energy efficiency, the state review process described above would be repeated.
- Requires (within 2 years) DOE to establish by rule Federal building energy standards that meet or exceed '92 CABO/MEC for residential or ASHRAE Standard 90.1 for commercial. These standards will contain provisions for the control of radon gas and other indoor air quality contaminants. DOE is directed to consult with CABO, ASHRAE, NAHB, AIA, NCSBCS, and other appropriate persons in establishing these standards.
- Requires DOE to support upgrading of voluntary energy codes for new residential and commercial buildings. This support is to include assisting in the improvement of the technical basis and determining the cost-effectiveness of such codes.
- Requires DOE to recommend changes to voluntary energy codes to upgrade the energy efficiency provisions and participate in the code change process.
- Amends the Cranston-Gonzalez National Affordable Housing Act as follows:
  - Requires (within 1 year) HUD and the Department of Agriculture (DOA) to establish by rule, energy efficiency standards for: <sup>1</sup>new construction of public and assisted housing and single family and multifamily housing subject to mortgages insured under Cranston-Gonzalez and; <sup>2</sup>new construction of single family houses subject to mortgages made by DOA under the Housing Act of 1949. VA is not under this requirement but will probably change its rules to be in accord with the other Federal agencies.
  - These standards must meet or exceed '92 CABO/MEC and must be cost effective with respect to construction and operating costs on a life-cycle cost basis. Congress has advised the Federal agencies they should use a 25 or 30 year term to reflect the fact that houses have long useful lives and are commonly financed through 30 year mortgages.

- Requires HUD and DOA to consult a task force composed of various housing agencies, various energy agencies, home builders, building code organizations, energy efficiency organizations, utilities and other interested persons in developing these standards. This will be the Section 109 Task Force.
- If HUD and DOA fail to meet the 1 year deadline for establishing these standards, all new construction affected by Cranston-Gonzalez will be required to meet or exceed CABO/MEC.
- Requires HUD and DOA to amend these standards within 1 year after any revisions of CABO/MEC assuming these revisions are technologically feasible and economically justified.

Section 102 - Residential Energy Efficiency Ratings:

- Amends Title II of the Energy Conservation and Production Act of 1976 (as amended in 1981).
- Requires DOE (within 18 months) to issue by rule voluntary guidelines to enable and encourage the assignment of energy efficient ratings to residential buildings. These guidelines may be used by state and local governments, utilities, builders, real estate agents, lenders, agencies in mortgage markets, and others. DOA must consult with HUD, VA, representatives of existing home energy rating programs, and other appropriate persons in formulating these guidelines.
- The above guidelines will include:
  - Encouraging uniformity with regard to systems for rating the annual energy efficiency of houses.
  - Establishment of procedures for: <sup>1</sup>certification of the technical accuracy of energy analysis tools, <sup>2</sup>training of persons conducting the ratings, <sup>3</sup>data collection, <sup>4</sup>quality control, and <sup>5</sup>monitoring and evaluation.
  - Encouraging consistency with, and support for, Federal energy efficient mortgages (EEMS).
  - Provisions that rating systems take into consideration local climate conditions and





construction practices, solar energy collected on site, and the benefits of peak load shifting construction practices, and not discriminate among fuel types.

- Establish procedures to insure that residential buildings can receive energy efficiency ratings at time of sale and that this rating is communicated to buyers.
- Requires DOE (within 2 years) to establish a program to provide technical assistance to state and local organizations to encourage adoption of residential energy efficiency rating systems consistent with the above guidelines.
- Requires DOE to report to Congress (within 3 years) the actions of states, local governments, and other organizations to implement the voluntary guidelines and to recommend the feasibility of requiring, as a prerequisite to receiving federally assisted, guaranteed, or insured mortgages, the achievement of a minimum energy efficiency rating.

Section 105 - Energy Efficient Mortgages:

- Amends the Cranston-Gonzalez National Affordable Housing Act as follows:
  - Defines energy efficient mortgage (EEM) as a mortgage that provides financing incentives for the purchase of energy efficient homes, or that provides financing incentives to make energy efficiency improvements in existing homes by incorporating the cost of such improvements in the mortgage.
  - Requires the HUD Section 109 Task Force to determine if notifying potential home buyers of the availability of EEMS would promote energy efficiency in houses, and if so, to recommend guidelines to accomplish this and identify the agencies and organizations to implement the guidelines.

Section 106 - Energy Efficient Mortgages Pilot Program:

- Requires HUD (within 6 months) to establish a pilot program in 5 states to promote the purchase of existing

energy efficient residential buildings and the installation of cost-effective improvements in existing residential buildings.

- The pilot program will include the following features:
  - Lenders will originate a housing loan insured under Title II of the National Housing Act in accordance with the applicable requirements.
  - Satisfactory income and credit is needed for loan approval.
  - The cost of cost-effective energy efficient improvements shall not exceed the greater of 5% of the property value (not to exceed \$8,000) or \$4,000.
  - HUD will grant mortgagees the authority to permit the final loan amount to exceed the loan limits under Title II by as much as 100% of the cost of the improvements and to sell the mortgage in the secondary market after the mortgage is issued but before the improvements are actually completed.
- Requires HUD to promote the pilot program in the following ways:
  - Make available information on the availability and benefits of EEMS to lending agencies.
  - Require mortgagees to provide written notice of the availability of EEMS and the benefits of the pilot program to those applying for loans in the 5 pilot program states.
  - Require each applicant for a qualifying mortgage in the 5 states to sign a statement that he or she was informed of the program and understands the benefits of EEMS.
- Requires HUD (within 2 years after implementation of the pilot program) to expand the program to include new residential housing on a national basis.
- Defines cost-effective with respect to energy efficiency improvements to a residential building as: improvements that result in the total present value cost of the improvements (including any maintenance and repair

that the implementation and administration of this program should be consistent with commonly accepted procedures.

- Requires DOE, if NFRC is not successful in developing this system within 1 year, to develop the rating system in cooperation with the National Institute of Science and Technology (NIST) and that the FTC prescribe the labeling rules.



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COPY

**Energy Study**  
**and Economic Analysis of the**  
**CABO 1993 Model Energy Code**

Springfield, Missouri  
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Winter Park, Florida  
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Oklahoma City, Oklahoma  
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*Sen. Energy & Nat Res*  
*3-13-97*  
*Attachment 6*



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March 12, 1997

**COPY**

Kansas Building Industry Association  
2300 S.W. 29th Street, Suite 121  
Topeka, Kansas 66611

Attention: Ms. Janet Stubbs  
Subject: Energy Study and Economic Analysis  
of the 1993 CABO Model Energy Code  
DCEI File: 611171

## **I. PURPOSE**

To evaluate the expense of compliance to the 1993 CABO Model Energy Code (MEC93) compared to energy savings incurred.

## **II. ABSTRACT**

Seven house plans were analyzed to compare the energy savings and additional construction costs that are a result of changes in construction practices due to minimum requirements mandated by the 1993 CABO Model Energy Code. The code requirements were compared to current standard construction practices. Two houses each were analyzed for Wichita, Hays, and Olathe, Kansas. One house was analyzed as built in Topeka, Kansas.

Payback Period Analysis was used to evaluate the costs incurred due to the 93MEC compared to energy savings. The Payback period for the investment on the houses ranged from six years to twelve years. A summary of the Payback Period Analysis is tabulated within the body of this report.

Several methods were available to determine a project's compliance to the 93MEC, including a prescriptive package checklist, an approved Home Energy Rating System

report with a score equal to or greater than MEC compliance, completion of an NAHB developed compliance form approved by FHA and HUD or MECcheck computer software documentation. A review of these methods found the MECcheck computer software documentation to be the simplest method of compliance resulting in the least expense in analysis and implementation.

The houses in this project were brought into compliance with the 1993 Model Energy Code using the minimum possible investment as mandated by changes in insulation by the MECcheck computer software. The changes all involved the insulation of basement walls and concrete slab edges. Other changes could have been used to bring the projects into compliance, such as higher efficiency furnaces, better insulating windows and doors, and additions to insulation in the upper portions of the houses. However, these changes would have been more expensive to implement than the option of insulating basement walls and concrete slab edges.

The seven house plans that were analyzed ranged from entry level to mid level homes. Houses with a higher percentage of windows and doors would have required substantial changes in addition to basement insulation in order to bring them into compliance with the 93MEC. Higher efficiency furnaces, Low-E window units and higher R-value insulation in the upper portions of these houses may have been required.

The method used to evaluate the economics involved in meeting the 1993 Model Energy Code (MEC93) as compared to current standard practice was the Pay Out Time or Payback Period Method. This method calculates the period of time it takes an investment to be completely paid back by the savings incurred due to the investment. This method gives a simple value with which to compare several investment alternatives.

An 8% annual mortgage rate with a ten percent down payment was used to calculate the cost of the investment over the life of a 30 year mortgage. Insulation costs were obtained from insulation contractors and MEANS guides to construction costs. Energy savings were calculated using methods from the ASHRAE 1993 Handbook of Fundamentals and standard engineering practices. Energy costs were obtained from local utilities.

### III. ANALYSIS AND RESULTS

#### A. PROJECT DESCRIPTION: WICHITA, KANSAS Entry Level Home

New house that has 864 square feet of living space. It has two bedrooms, 1 1/2 baths, an unfinished basement, fireplace and a two car garage. This house would sell for 67,000 dollars in the Wichita area. The house is considered an entry level home.

The following changes were made to bring the house's energy standards up to the 1993 CABO Model Energy Code.

- R10 sheet insulation was applied either to the exterior foundation or the interior basement wall to a depth of 4 feet below grade at a cost of \$1.50 per square foot.

#### ECONOMIC ANALYSIS

Expense to meet MEC93 code:	\$1107
Savings per year:	\$115
Break even point	10 years
Addition to monthly mortgage payment	\$7.52
Average savings per month	\$2.06

## B. PROJECT DESCRIPTION: WICHITA, KANSAS Mid Level Home

New house that has 1554 square feet of living space. It has three bedrooms, 2 baths, an unfinished basement, fireplace, breakfast nook and a two car garage. This house would sell for 135,000 dollars in the Wichita area. The house is considered a mid level home.

The following changes were made to bring the house's energy standards up to the 1993 CABO Model Energy Code.

- R-10 sheet insulation was applied to the exterior foundation or the interior basement wall to the full depth of the foundation wall at a cost of \$1.50 per square foot.
- R-10 sheet insulation was added to the edge of an exposed floor slab to a depth of one foot at a cost of \$1.50 per square foot.

### ECONOMIC ANALYSIS

Expense to meet MEC93 code:	\$1483
Savings per year:	\$122
Break even point	12 years
Addition to monthly mortgage payment	\$9.88
Average savings per month	\$0.19



**C. PROJECT DESCRIPTION: HAYS, KANSAS Entry Level Home**

New house that has 1834 feet of living space including the finished basement. It has three bedrooms, two baths, a finished basement, fireplace, rec-room and a two car garage. The house is considered an entry level home in the Hays, Kansas area. This home would sell for approximately 95,000 dollars in the Hays, Kansas area.

The following changes were made to bring the house's energy standards up to the 1993 CABO Model Energy Code.

- R-15 insulation was applied to the interior basement wall to the full depth of the basement at a cost of \$1.25 per square foot.

**ECONOMIC ANALYSIS**

Expense to meet MEC93 code:	\$1251
Savings per year:	\$175
Break even point	7 years
Addition to monthly mortgage payment	\$8.50
Average savings per month	\$6.08

#### D. PROJECT DESCRIPTION: HAYS, KANSAS Mid Level Home

New house that has 1596 square feet of living space. It has two bedrooms, 2 baths, unfinished basement, fireplace and a two car garage. This house would sell for approximately 130,000 dollars in the Hays, Kansas area. The house is considered a mid level home.

The following changes were made to bring the house's energy standards up to the 1993 CABO Model Energy Code.

- R-10 sheet insulation was applied to the exterior foundation or the interior basement wall to the full depth of the foundation at a cost of \$1.50 per square foot.
- R-15 insulation value was applied along the front basement wall at a cost of \$1.25 per square foot.
- R-5 sheet insulation to an exposed floor slab to a depth of 24 inches below grade at a cost of \$.75 per square foot.

#### ECONOMIC ANALYSIS

Expense to meet MEC93 code:	\$1605
Savings per year:	\$173
Break even point	9 years
Addition to monthly mortgage payment	\$10.90
Average savings per month	\$3.51

**E. PROJECT DESCRIPTION: OLATHE, KANSAS Entry Level Home**

New house that has 1493 square feet of living space. It has three bedrooms, two baths, unfinished basement, fireplace and a two car garage. This house would sell for approximately 110,000 dollars in the Olathe, Kansas area. The house is considered an entry level home.

The following changes were made to bring the house's energy standards up to the 1993 CABO Model Energy Code.

- R-5 sheet insulation was applied to the interior of the basement wall at a cost of \$.75 per square foot in a portion of the basement that was above grade.

**ECONOMIC ANALYSIS**

Expense to meet MEC93 code:	\$101
Savings per year:	\$13
Break even point	8 years
Addition to monthly mortgage payment	\$10.90
Average savings per month	\$0.40

**F. PROJECT DESCRIPTION: OLATHE, KANSAS Mid Level Home**

New house that has 2305 square feet of living space. It has four bedrooms, 2 1/2 baths, unfinished basement, fireplace and a two car garage. This house would sell for approximately 155,000 dollars in the Olathe, Kansas area. The house is considered a mid level home.

The following changes were made to bring the house's energy standards up to the 1993 CABO Model Energy Code.

- R-5 sheet insulation was applied to the exterior foundation or the interior basement wall to four feet below the top of the wall at a cost of \$.75 per square foot.

**ECONOMIC ANALYSIS**

Expense to meet MEC93 code:	\$615
Savings per year:	\$88
Break even point	7 years
Addition to monthly mortgage payment	\$4.18
Average savings per month	\$3.16

### G. PROJECT DESCRIPTION: TOPEKA, KANSAS Mid Level Home

New house that has 1586 square feet of living space. It has three bedrooms, 2 baths, unfinished basement and a two car garage. This house would sell for approximately 135,000 dollars in the Topeka, Kansas area. The house is considered a mid level home.

The following changes were made to bring the house's energy standards up to the 1993 CABO Model Energy Code.

- R-10 sheet insulation was applied to the exterior foundation or the interior basement wall to the upper six feet of the foundation at a cost of \$1.50 per square foot.

### ECONOMIC ANALYSIS

Expense to meet MEC93 code:	\$1572
Savings per year:	\$150
Break even point	10 years
Addition to monthly mortgage payment	\$10.67
Average savings per month	\$1.82

#### IV . INSULATION INDUSTRY NUMBERS ANALYSIS

The insulation industry supplied numbers that they suggested would be required to comply with the 1993 CABO Model Energy Code (NAIMA letter attached). The savings per year of \$174 for their suggested investment of \$1300 was higher than was found in this study. Using the \$1300 investment strictly for basement insulation in an unfinished basement, our study found a savings of between \$110-\$120. The Payback Analysis was performed on the insulation industries numbers, even though the energy savings of \$174 is questionable.

#### ECONOMIC ANALYSIS

Expense to meet MEC93 code:	\$1300
Savings per year:	\$174
Break even point	7 years
Addition to monthly mortgage payment	\$8.83
Average savings per month	\$5.67

#### V . SUMMARY

A summary of the results of this study is tabulated below. The average savings per month for the project is \$2.46. The lowest savings, \$0.19, was found in Project house B, the mid level Wichita house. The largest savings was \$6.08 in the entry level Hays house, Project house C. This larger savings is due in part to the basement of this house being finished as part of the existing plan. A higher temperature difference was required because the basement was a heated space. This resulted in a larger energy savings. The payback period for the investments due to the 93MEC ranged from 7 years to 12 years.

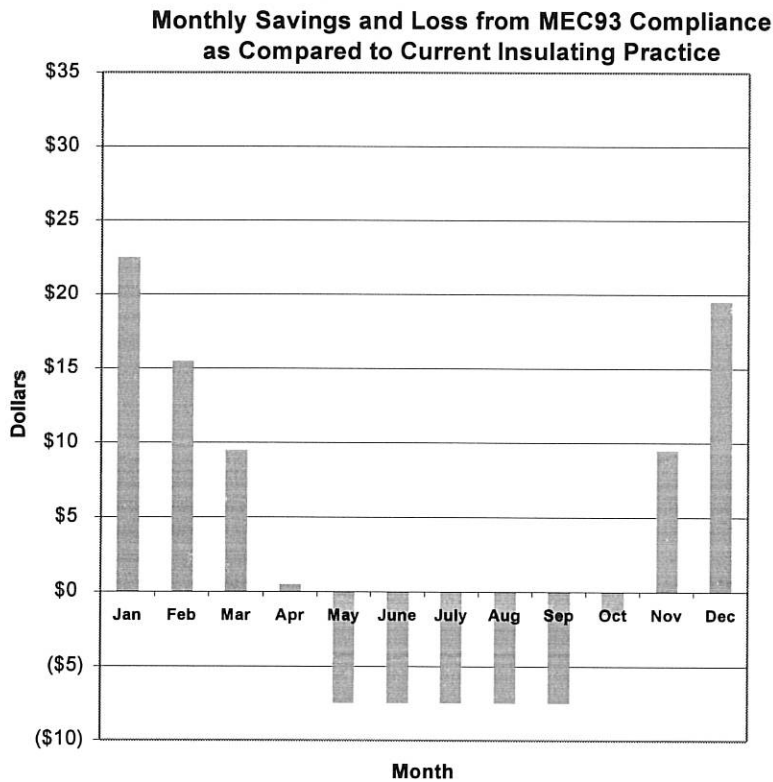
The average of the payback period is 9 years.

**ECONOMIC ANALYSIS SUMMARY**

House	Expense to meet MEC93	Energy Savings per year	Break Even Point	Total Savings per month
A	\$1107	\$115	10 years	\$2.06
B	\$1483	\$122	12 years	\$.19
C	\$1251	\$175	7 years	\$6.08
D	\$1605	\$173	9 years	\$3.51
E	\$101	\$13	8 years	\$.41
F	\$615	\$88	7 years	\$3.16
G	\$1572	\$150	10 years	\$1.82

**PROJECT SUMMARY**

House	Location/ Type	Square Feet	Bedrooms	Bathrooms	Basement	Market Value
A	Wichita/ Entry Level	864	2	1 1/2	unfinished	\$67,000
B	Wichita/ Mid Level	1554	3	2	unfinished	\$135,000
C	Hays/ Entry Level	1834	3	2	finished	\$95,000
D	Hays/ Mid Level	1596	2	2	unfinished	\$130,000
E	Olathe/ Entry Level	1493	3	2	unfinished	\$110,000
F	Olathe/ Mid Level	2305	4	2 1/2	unfinished	\$155,000
G	Topeka/ Mid Level	1586	3	2	unfinished	\$135,000



Savings as compared to added expense per month for house A, the Wichita, Kansas, entry level house, are presented in the graph shown above. This graph shows that all savings are realized in the winter months. No monetary savings are realized as a result of compliance to the 1993 Model Energy Code for the months from May to October.

**DRESSLER CONSULTING ENGINEERS, INCORPORATED**

Joseph A. Yoder, I.E.  
Associate Engineer

Michael Hanson, P.E.  
Director  
Engineering Services  
Quality Review

Attachments: MECcheck printouts  
NAIMA Letter



MEC ck COMPLIANCE REPOH  
199 Model Energy Code  
MECcheck Software Version 2.0

A

Permit #
Checked by/Date

CITY: Wichita  
STATE: Kansas  
HDD: 4791  
CONSTRUCTION TYPE: Single Family  
DATE: 2-20-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: FAILS  
Required UA = 244  
Your Home = 443

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
-----	-----	-----	-----	-----	-----
CEILINGS	900	31.0	0.0		31
WALLS: Wood Frame, 16" O.C.	847	13.0	0.0		63
GLAZING: Windows or Doors	127			0.500	64
DOORS	20			0.230	5
BSMT: 8.0' ht/6.0' bg/6.0' insul.	960	0.0			280
-----	-----	-----	-----	-----	-----

MEC k COMPLIANCE REPOR  
 1993 Model Energy Code  
 MECcheck Software Version 2.0

Permit #
Checked by/Date

A

CITY: Wichita  
 STATE: Kansas  
 HDD: 4791  
 CONSTRUCTION TYPE: Single Family  
 DATE: 2-20-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: PASSES  
 Required UA = 244  
 Your Home = 236

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	900	31.0	0.0		31
WALLS: Wood Frame, 16" O.C.	847	13.0	0.0		63
GLAZING: Windows or Doors	127			0.500	64
DOORS	20			0.230	5
BSMT: 8.0' ht/6.0' bg/6.0' insul.	960	10.0			73

COMPLIANCE STATEMENT: The proposed building design represented in these documents is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the requirements of the 1993 CABO Model Energy Code.

Builder/Designer \_\_\_\_\_ Date \_\_\_\_\_

Permit #
Checked by/Date

B

CITY: Wichita  
 STATE: Kansas  
 HDD: 4791  
 CONSTRUCTION TYPE: Single Family  
 DATE: 2-6-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: FAILS  
 Required UA = 456  
 Your Home = 585

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	1536	30.0	0.0		54
WALLS: Wood Frame, 16" O.C.	1728	11.0	2.0		132
GLAZING: Windows or Doors	349			0.500	175
DOORS	60			0.200	12
BSMT: 8.0' ht/8.0' bg/8.0' insul.	700	0.0			106
BSMT: 8.0' ht/4.0' bg/8.0' insul.	108	0.0			46
SLAB FLOORS: Unheated, 12.0" insul.	58	0.0			60

Permit #

Checked by/Date

CITY: Wichita  
 STATE: Kansas  
 HDD: 4791  
 CONSTRUCTION TYPE: Single Family  
 DATE: 2-6-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: PASSES  
 Required UA = 456  
 Your Home = 456

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	1536	30.0	0.0		54
WALLS: Wood Frame, 16" O.C.	1728	11.0	4.0		118
GLAZING: Windows or Doors	349			0.500	175
DOORS	60			0.200	12
BSMT: 8.0' ht/8.0' bg/8.0' insul.	700	10.0			38
BSMT: 8.0' ht/4.0' bg/8.0' insul.	108	10.0			8
SLAB FLOORS: Unheated, 12.0" insul.	58	10.0			51

COMPLIANCE STATEMENT: The proposed building design represented in these documents is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the requirements of the 1993 CABO Model Energy Code.

Builder/Designer \_\_\_\_\_ Date \_\_\_\_\_

6.17  
 6-16

Permit #
Checked by/Date

CITY: Hays  
 STATE: Kansas  
 HDD: 5665  
 CONSTRUCTION TYPE: Single Family  
 DATE: 2-6-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: FAILS  
 Required UA = 231  
 Your Home = 344

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	1008	30.0	0.0		36
WALLS: Wood Frame, 16" O.C.	878	11.0	2.0		67
GLAZING: Windows or Doors	186			0.450	84
DOORS	42			0.200	8
BSMT: 8.0' ht/8.0' bg/8.0' insul.	984	0.0			149

6-18  
~~6-17~~

Permit #
Checked by/Date

CITY: Hays  
 STATE: Kansas  
 HDD: 5665  
 CONSTRUCTION TYPE: Single Family  
 DATE: 2-6-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: PASSES  
 Required UA = 231  
 Your Home = 230

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	1008	30.0	0.0		36
WALLS: Wood Frame, 16" O.C.	878	11.0	4.0		60
GLAZING: Windows or Doors	186			0.450	84
DOORS	42			0.200	8
BSMT: 8.0' ht/8.0' bg/8.0' insul.	984	15.0			42

COMPLIANCE STATEMENT: The proposed building design represented in these documents is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the requirements of the 1993 CABO Model Energy Code.

Builder/Designer \_\_\_\_\_ Date \_\_\_\_\_

6-19  
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MEC k COMPLIANCE REPORT  
 1993 Jdel Energy Code  
 MECcheck Software Version 2.0

D

Permit #
Checked by/Date

CITY: Hays  
 STATE: Kansas  
 HDD: 5665  
 CONSTRUCTION TYPE: Single Family  
 DATE: 2-6-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: FAILS  
 Required UA = 406  
 Your Home = 581

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
-----					
CEILINGS	1596	30.0	0.0		56
WALLS: Wood Frame, 16" O.C.	1824	11.0	2.0		139
GLAZING: Windows or Doors	331			0.450	149
DOORS	60			0.200	12
BSMT: 8.0' ht/8.0' bg/8.0' insul.	540	0.0			82
BSMT: 8.0' ht/4.0' bg/8.0' insul.	192	0.0			82
BSMT: 8.0' ht/6.0' bg/8.0' insul.	152	0.0			44
SLAB FLOORS: Unheated, 24.0" insul.	16	0.0			17
-----					

6-20  
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Permit #

Checked by/Date

CITY: Hays  
 STATE: Kansas  
 HDD: 5665  
 CONSTRUCTION TYPE: Single Family  
 DATE: 2-6-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: PASSES  
 Required UA = 406  
 Your Home = 402

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	1596	30.0	0.0		56
WALLS: Wood Frame, 16" O.C.	1824	11.0	4.0		124
GLAZING: Windows or Doors	331			0.450	149
DOORS	60			0.200	12
BSMT: 8.0' ht/8.0' bg/8.0' insul.	540	15.0			23
BSMT: 8.0' ht/4.0' bg/8.0' insul.	192	10.0			15
BSMT: 8.0' ht/6.0' bg/8.0' insul.	152	10.0			10
SLAB FLOORS: Unheated, 24.0" insul.	16	5.0			13

COMPLIANCE STATEMENT: The proposed building design represented in these documents is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the requirements of the 1993 CABO Model Energy Code.

Builder/Designer \_\_\_\_\_ Date \_\_\_\_\_

6-21  
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MECcheck COMPLIANCE REPORT  
 1995 Model Energy Code  
 MECcheck Software Version 2.0

Permit #
Checked by/Date

CITY: Olathe  
 STATE: Kansas  
 HDD: 5066  
 CONSTRUCTION TYPE: Single Family  
 DATE: 2-13-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: FAILS  
 Required UA = 369  
 Your Home = 388

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	1253	30.0	0.0		44
WALLS: Wood Frame, 16" O.C.	1548	13.0	0.0		116
GLAZING: Windows or Doors	77			0.410	32
GLAZING: Windows or Doors	42			0.500	21
DOORS	40			0.400	16
FLOORS: Over Unconditioned Space	308	19.0			15
BSMT: 8.0' ht/4.0' bg/0.0' insul.	111	0.0			47
BSMT: 8.0' ht/8.0' bg/2.0' insul.	160	0.0			24
SLAB FLOORS: Unheated, 0.0" insul.	70	0.0			73

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MEC ck COMPLIANCE REPORT  
 1993 Model Energy Code  
 MECcheck Software Version 2.0

Permit #
Checked by/Date

CITY: Olathe  
 STATE: Kansas  
 HDD: 5066  
 CONSTRUCTION TYPE: Single Family  
 DATE: 2-13-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: PASSES  
 Required UA = 369  
 Your Home = 362

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	1253	30.0	0.0		44
WALLS: Wood Frame, 16" O.C.	1548	13.0	0.0		116
GLAZING: Windows or Doors	77			0.410	32
GLAZING: Windows or Doors	42			0.500	21
DOORS	40			0.400	16
FLOORS: Over Unconditioned Space	308	19.0			15
BSMT: 8.0' ht/8.0' bg/0.0' insul.	160	0.0			24
BSMT: 8.0' ht/4.0' bg/4.0' insul.	111	5.0			21
SLAB FLOORS: Unheated, 0.0" insul.	70	0.0			73

COMPLIANCE STATEMENT: The proposed building design represented in these documents is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the requirements of the 1993 CABO Model Energy Code.

Builder/Designer \_\_\_\_\_ Date \_\_\_\_\_

6-23  
~~6-22~~

MECcheck COMPLIANCE REPORT  
1990 Model Energy Code  
MECcheck Software Version 2.0

Permit #
Checked by/Date

CITY: Olathe  
STATE: Kansas  
HDD: 5066  
CONSTRUCTION TYPE: Single Family  
DATE: 2-13-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: FAILS  
Required UA = 483  
Your Home = 532

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	1255	30.0	0.0		44
WALLS: Wood Frame, 16" O.C.	2206	13.0	0.0		165
GLAZING: Windows or Doors	263			0.430	113
DOORS	40			0.200	8
FLOORS: Over Unconditioned Space	427	19.0			20
BSMT: 8.0' ht/8.0' bg/0.0' insul.	1200	0.0			182

6.24  
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MEC ck COMPLIANCE REPORT  
199 Model Energy Code  
MECcheck Software Version 2.0

Permit #

Checked by/Date

CITY: Topeka  
STATE: Kansas  
HDD: 5323  
CONSTRUCTION TYPE: Single Family  
DATE: 2-13-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: FAILS  
Required UA = 326  
Your Home = 449

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	1586	30.0	0.0		56
WALLS: Wood Frame, 16" O.C.	1222	11.0	2.0		93
GLAZING: Windows or Doors	186			0.450	84
DOORS	40			0.200	8
BSMT: 8.0' ht/8.0' bg/0.0' insul.	1376	0.0			208

6-25

~~6-24~~

Permit #
Checked by/Date

CITY: Olathe  
 STATE: Kansas  
 HDD: 5066  
 CONSTRUCTION TYPE: Single Family  
 DATE: 2-13-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: PASSES  
 Required UA = 500  
 Your Home = 499

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	1255	30.0	0.0		44
WALLS: Wood Frame, 16" O.C.	2206	13.0	0.0		165
GLAZING: Windows or Doors	263			0.430	113
DOORS	40			0.200	8
FLOORS: Over Unconditioned Space	427	19.0			20
BSMT: 8.0' ht/6.0' bg/4.0' insul.	1200	5.0			149

COMPLIANCE STATEMENT: The proposed building design represented in these documents is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the requirements of the 1993 CABO Model Energy Code.

Builder/Designer \_\_\_\_\_ Date \_\_\_\_\_

6-26  
~~6-25~~

Permit #
Checked by/Date

CITY: Topeka  
STATE: Kansas  
HDD: 5323  
CONSTRUCTION TYPE: Single Family  
DATE: 2-13-1997

DATE OF PLANS:

TITLE:

COMPLIANCE: PASSES  
Required UA = 326  
Your Home = 325

	Area or Perimeter	Insul R-Value	Sheath R-Value	Glazing/Door U-Value	UA
CEILINGS	1586	30.0	0.0		56
WALLS: Wood Frame, 16" O.C.	1222	11.0	2.0		93
GLAZING: Windows or Doors	186			0.450	84
DOORS	40			0.200	8
BSMT: 8.0' ht/8.0' bg/6.0' insul.	1376	10.0			84

COMPLIANCE STATEMENT: The proposed building design represented in these documents is consistent with the building plans, specifications, and other calculations submitted with the permit application. The proposed building has been designed to meet the requirements of the 1993 CABO Model Energy Code.

Builder/Designer \_\_\_\_\_ Date \_\_\_\_\_

6-27  
~~6-26~~

**NAIMA**  
NORTH AMERICAN INSULATION  
MANUFACTURERS ASSOCIATION

January 27, 1997

The Honorable Don Myers  
House Utilities Committee  
State Capitol, Room 175W  
Topeka, KS 66604

Dear Representative Myers:

I am pleased to submit the following statement, on behalf of the North American Insulation Manufacturers Association (NAIMA), and our respective companies, which employ over 1500 workers at three separate manufacturing operations in Kansas. This testimony is submitted for the record in opposition to SB 74. If enacted, this legislation would eliminate the Kansas Corporation Commission's (KCC) authority to adopt and enforce energy standards for residential structures.

The Model Energy Code is important to homeowners for the following reasons:

1. The Council of American Building Officials (CABO) developed the Model Energy Code (MEC) through a voluntary, private initiative that brought together parties interested in construction and energy efficiency including the homebuilders. This code was not established through government action.
2. The KCC also made compliance with MEC 93 voluntary and self-enforcing. Homebuilders who prefer not to adopt MEC 93 (or any of the other standards) must simply notify the homebuyer that the house does not comply with the state's recommended efficiency standards. This simple notification protects the consumer.
3. Federally financed mortgage assistance programs, such as VA and FHA mortgages, will no longer be available to Kansas residents because federal law makes such loans contingent on MEC certification. This will eliminate individuals from the market who most need financial assistance to purchase a home.

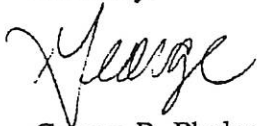
6-28  
~~6-27~~

The Honorable Don Myers  
January 27, 1997  
Page 2

4. Without the MEC, homeowner's monthly utility bills will increase as more energy will be required to yield the same interior comfort level. The MEC adds approximately \$1300 to the cost of a new home in Kansas, increasing the monthly mortgage about \$8-10, or between \$96-120/year over the duration of a loan. More significantly, homeowners will use less fuel; saving approximately \$174 in the first year alone.
5. Lastly, the Model Energy Code saves approximately 68 billion BTUs of energy each year in Kansas; thus, avoiding emission of over 3200 tons of pollution into the atmosphere.

We would be pleased to discuss this issue in more detail with you and your colleagues. On behalf of our member companies and their employees, we urge you to preserve the Model Energy Code in its current form, and to oppose SB 74.

Sincerely,



George R. Phelps  
Director, Government and Industry Affairs

bsb

6-29

~~6-28~~



Testimony in favor of the substitute for HB 2140  
Robert R. Hogue  
President RHCI-Topeka, KS

We have been using the CABO energy code for a few months and I would like to bring you up to date on a few of the results.

Thanks to the energy code, insulation manufacturers, suppliers, installers and builders are making more money on the homes we build.

The alternative performance methods allowed by the code are not being used by most builders. Performance and trade off methods are confusing to consumers. They want it simple. Prescriptive methods are dominating and the consumer feels they have no control.

Nobody is policing the current law and it is going to be easy for people who want to cheat to do so.

The industry continues to make voluntary, economically viable changes to products and methods. Pella Window Co. has just begun shipping Lo E, Argon filled glass to NE Kansas at no additional cost.

Relatively affordable housing is one of the main drawing cards Kansas has to offer prospective new residents. The energy code has caused an unwarranted step function change in the cost of new housing.

See RHCI Housing Cost Index and Attachment A.

Elderly people, retirees, and young first time home buyers are finding it harder to buy new homes and are staying in less energy efficient (and less functional for their lifestyles) older homes.

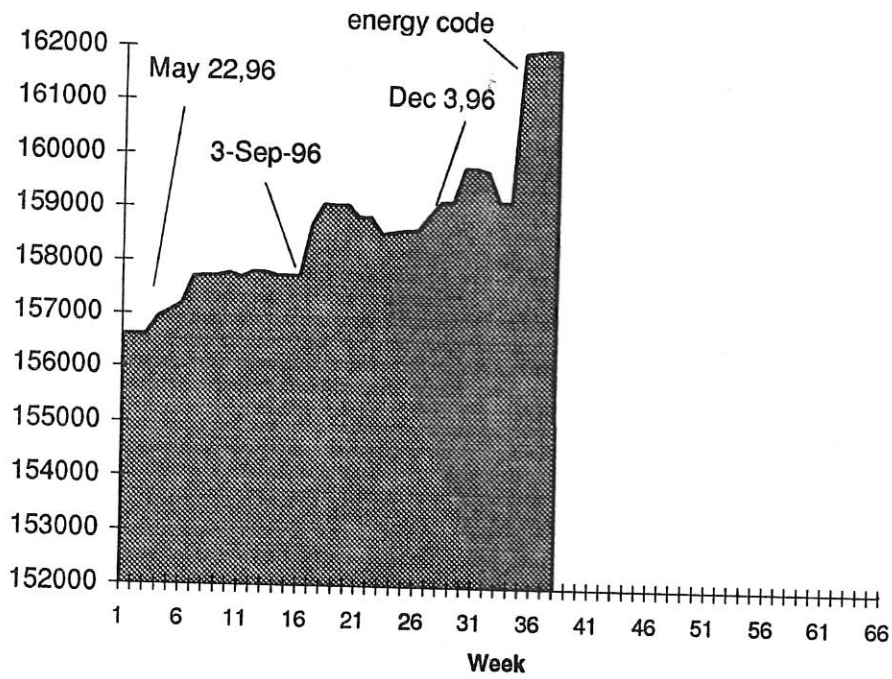
When all costs are included, consumers are losing money and will never recover the costs of the energy code. (See Attachment A.)

Homes being built in Topeka met the performance criteria of the code even before the code was put in place. Russ Rudy tested one and NAHB tested 4 of my pre-code homes last year. All passed the performance requirements of the code but none of them would have passed the MEC Check program or any of the prescriptive solutions.

I'm very much in favor of an informed purchaser and support the substitute for HB 2140.

*Sen. Energy & Nat. Res*  
*3-13-97*  
*attachment 7*

## RHCI Housing Cost Index



The RHCI Housing Cost Index is a weekly measure of all the costs associated with buying a real new home(RHCI-1117) in Topeka. This home cost \$150,000 to build in 1994 and represented the median home we built in that year.

I calculated the impact on a typical new home I built last year in Topeka. It is our RHCI-1117 with 2,347 square feet and it sells for \$155,742 in Prairie Trace Subdivision without the changes required by the new energy code. I added the required energy code changes one-at-a-time to the parts list and noted the impact on cost and energy consumption. The results are listed in the Table below.

	Cost	Cost of Change	Annual BTU Saved X 1,000,000	Annual \$ Saved
Pre-energy code cost	\$155,742			
Change to R-38 ceilings	\$155,833	\$91	1.21	\$7.75
Change to R-13 wall insulation	\$156,131	\$298	4.38	\$28.09
Change from R-2 to R-6 sheathing	\$156,477	\$346	4.40	\$28.22
Change to triple glazing	\$157,422	\$945	12.90	\$82.73
Insulate full basement wall	\$158,593	\$1171	12.0	\$76.96
<b>Total Change</b>	<b>\$2,851</b>		<b>34.89</b>	<b>\$223.75</b>

An annual savings of \$223.75 sounds good, but the costs associated with that are as follows:

Increased property taxes	\$4.50/mo	\$54.00/yr
Increased insurance	\$1.00/mo	\$12.00/yr
Increased mortgage payments	\$18.00/mo	<u>\$216.00/yr</u>
<b>Total Costs</b>		<b>\$282.00/yr</b>

This does not take into account the lost investment potential of the \$70.00 additional closing costs or the additional monthly costs, nor does it take into account the long term escalation in the price of natural gas.

**BEFORE THE SENATE ENERGY AND NATURAL RESOURCES COMMITTEE**

**PRESENTATION OF THE  
KANSAS CORPORATION COMMISSION ON  
HB 2140**

The Commission supports the overall approach of this bill but would recommend one important change.

HB 2140 as originally written was nearly identical to SB 74 which the KCC neither supported nor opposed. SB 74 and the original version of HB 2140 would have removed the Commission's authority to adopt residential energy efficient building codes with no provision to place this authority with any other state entity. As you may recall, the Commission's order on this matter required builders to inform their customers if their new residence did or did not meet the 1993 Council of America Building Officials Model Energy Code (CABO MEC93). The Commission did state in testimony that it would fully support either modifying portions of SB 74 to reinstate the Commission's authority over all utilities in this matter, or to remove the Commission's authority over residential building energy efficiency altogether. Certainly this bill does remove the Commission's authority and responsibility in this matter.

However, as stated in the Commission's testimony on SB 74, the Commission's authority and responsibility in regulating electric and natural gas utilities clearly includes a concern for the environmental and economic benefits of efficient energy usage. Furthermore the Commission remains convinced that building energy efficiency standards, such as the CABO model energy code, do provide the consumer with a benchmark to judge the energy efficiency of their new residence. The Commission's order required builders to disclose code compliance to the homeowner while this bill require builders disclosure of various insulation values and appliance efficiencies. The Commission supports this form of disclosure, but remains concerned that the long list of specific values disclosed may not be meaningful to the typical homeowner. As a solution, the Commission proposes that section 2 of the bill be amended to also require the builder to disclose the following:

**“Overall expected energy usage of the house and expected energy usage of an identical house built to meet the minimum requirements of the 1993 CABO model energy code.”**

This change would give the new homeowner a method for comparing the efficiencies of a new home similar to that currently provided on new appliances and automobiles. With this addition the Commission could support HB 2140.