



20 N. Wacker Drive, Suite 1301
Chicago, Illinois 60606

312.587.8390 Main Line

312.587.8391 Fax

www.mwalliance.org

February 21, 2024

Tony Williamson, Bureau of Construction Codes
Michigan Bureau of Construction Codes
P.O Box 30254
Lansing, MI 48933
Lara-bcc-rules@michigan.gov

Re: MEEA Public Comments on Michigan's Adoption of the Residential & Commercial Building Energy Efficiency Codes

Dear Mr. Williamson,

Thank you for the opportunity to speak on the current Michigan Building Energy Code update. The Midwest Energy Efficiency Alliance (MEEA) is a member-based, non-profit organization promoting energy efficiency to optimize energy generation, reduce consumption, create jobs and decrease carbon emissions in all Midwest communities. We have worked in Michigan on energy code adoption since 2009.

As proposed, the rules to update the Michigan Building Energy Code contain a few amendments that weaken the 2021 International Energy Conservation Code (IECC). The amendments primarily affect the residential requirements for duct testing and the commercial requirements for lighting alterations. If these changes remain in the code as passed, Michiganders will not realize the full benefits of the 2021 IECC.

Thus, MEEA recommends the adoption of the 2021 IECC without weakening amendments as the statewide minimum building energy code for residential and commercial buildings. Adopting the 2021 IECC without weakening amendments is cost-effective, will reduce utility bills, opens new federal funding streams for the state, municipalities and businesses, and cuts greenhouse gas emissions.

The Michigan Cost-Effectiveness Criteria is Widely Misunderstood

Michigan is the only Midwestern state with requirements in statute regarding cost-effectiveness, but those requirements are widely misunderstood and commonly misstated. While the Michigan Stille-Derossett-Hale Single State Construction Code Act ("Act") does require that the state adopt codes that are "cost-effective," the statute does not require a seven-year simple payback analysis to determine what is "cost-effective."¹ Rather, the Act requires that the "benefits and costs over a 7-year time period" simply be *considered*.² A life-cycle cost method, which considers both the costs and benefits as experienced by a homeowner, is the more appropriate perspective and is the method used by the U.S. Department of Energy (DOE) and the Pacific Northwest National Laboratory (PNNL) to calculate the cost-effectiveness of

¹ MCL 125.1502a, 125.1504

² MCL 125.1502a(1)(p)(ii)

Michigan's current residential code update. Moreover, the life-cycle cost method has become a common practice in code adoption considerations across the country.

Adopting Unamended Energy Codes is Cost-Effective

Buildings have long-term impacts beyond their initial construction costs, and energy codes play a crucial role in providing monetary payback to owners or renters. The adoption of the 2021 IECC can significantly reduce energy consumption and lower utility costs for residents and businesses.

According to a cost-effectiveness study conducted by PNNL for the state using methodology widely accepted across the country, an average Michigan homeowner would see positive cash flow within four years³ with a home built to the full 2021 IECC over the current Michigan code. According to another analysis conducted by PNNL for DOE, "adopting the 2021 IECC in Michigan is expected to result in homes that are energy efficient, more affordable to own and operate, and based on current industry standards for health, comfort and resilience."⁴ More specifically, the residential 2021 IECC will provide Michigan-specific **energy savings of 10.7%** compared to the current state energy code, equating to about \$327 of annual utility bill savings for Michigan households. Statewide, Michigan homeowners will collectively save nearly **\$4 million within the first year of adoption**, resulting in almost **\$1.3 billion in energy savings** over the next 30 years.⁵

Adopting unweakened model energy codes ensures cost-effectiveness while minimizing potential impact on the building industry. The International Code Council (ICC) considers cost-effectiveness with each update of the model energy codes, and each development is intended to be an incremental change for the building industry. In delaying or weakening adoption of the 2021 IECC, the state risks having an undertrained workforce that falls behind neighboring jurisdictions and an out-of-date building stock that wastes energy and money. Skipping or weakening the model energy codes makes it less likely that cost-effectiveness can be achieved, effectively leaving the Michigan building industry and Michigan citizens behind. With the four-year life-cycle payback analysis, Michigan should therefore feel confident that **the unweakened 2021 IECC is cost-effective**.

Funding and Resources to Implement the 2021 IECC are Available

Now is prime time for Michigan to adopt the unweakened 2021 IECC. Federal funding and technical assistance resources are becoming available for state's adopting the unamended 2021 IECC and some Michigan utilities are poised to implement residential energy code assistance programs upon its adoption, supplementing upcoming state compliance efforts.

³ [Pacific Northwest National Laboratory, Cost-Effectiveness Analysis of the 2021 IECC for the State of Michigan, August 2023](#)

⁴ [Pacific Northwest National Laboratory, Cost-Effectiveness of the 2021 IECC for Residential Buildings in Michigan, July 2021](#)

⁵ [Pacific Northwest National Laboratory, Cost-Effectiveness of the 2021 IECC for Residential Buildings in Michigan, July 2021](#)

Adoption of the unamended 2021 IECC would position Michigan to leverage millions of dollars in funding opportunities, bolstering the state's capacity to advance its clean energy and sustainability objectives. In particular, the DOE State and Community Energy Programs (SCEP) office recently announced that it will provide up to \$400 million to support states in adopting and implementing the latest model energy codes (i.e., the 2021 IECC).⁶ **Over \$8.5 million of this funding is available to Michigan alone**, and it may be used for workforce development, implementation, compliance training, weatherization and more. The Bipartisan Infrastructure Law also provides \$225 million for resilient and efficient codes implementation. States are eligible to receive this money if they update to more recent model energy codes, or if they conduct studies, training and implementation of more efficient codes or building policies.

There are also local resources available and ready to use for training and education of the 2021 IECC. Consumers Energy, DTE Energy and Michigan's Department of Environment, Great Lakes, and Energy (EGLE) are currently prepared to provide technical assistance and support to the state's residents and workforce in order to achieve compliance with the 2021 IECC. Indeed, MEEA (a project partner) has already conducted similar code training that has improved compliance in Nebraska, Kentucky and Missouri.

The Building Industry is Ready for the 2021 IECC

A field study conducted in Michigan throughout 2022 and 2023 concluded that many measures of the residential 2021 IECC are already being practiced by Michigan builders. The study, in its final evaluation phase, was conducted by MEEA on behalf of the U.S. DOE and Michigan's Department of Licensing and Regulatory Affairs (LARA), with BER providing the site visits and data collection. The study used a random-sampling methodology⁷ developed by DOE that is widely considered the standard for residential field studies, and in short was conducted to determine the typical building construction methods utilized across Michigan. The following information is not the full scope of the report (which is still in development by PNNL) but offers some preliminary trends according to observable data:

- The prescriptive path is the least utilized compliance path according to our field study, with only 6% of participants included. The two performance path options, which have efficiency targets but allow designers and builders flexibility in choosing and trading off provisions to meet them, are the most utilized in Michigan. The most used compliance path was the UA Performance Path at 75%, with the ERI Performance Path the second-used at 19%. This shows the UA Performance Path, and or the latest proposed energy code, is currently the main performance path used by builders. This highlights the state's building industries' readiness and ability to update Michigan's building energy code to the 2021 IECC.
- Michigan builders are building with most of their ducts inside conditioned space, with around 79% of observed homes with all ducts located in conditioned space. Of our

⁶ [Technical Assistance for the Adoption of Building Energy Codes | Department of Energy](#)

⁷ [EERE Technical Report Template \(energycodes.gov\)](#)

sample, that number increases to 93% when considering 85% or more of the ducts located in conditioned space.

- Around 20% of homes in the study included the use of continuous insulation for above-grade wall assemblies, which is significantly higher than other Midwest states.

Based on these trends, Michigan builders should feel confident about their ability to meet the full 2021 IECC. The most common code change concerns are usually related to the additional efficiency requirements and the use of continuous insulation in the prescriptive path. It appears that Michigan builders can easily meet the “100% of ducts in conditioned space” option of the additional efficiency requirements, and that one in five homes are already using continuous insulation. With 94% of participating homes using a performance path, it also seems that builders are very familiar with how to trade off envelope provisions, meaning that they would not even need to adhere to the continuous insulation requirements of the prescriptive path option if they did not want to. For these reasons, **there is no need for the state to weaken the prescriptive path or any other provisions of the 2021 IECC.**

Adopting the 2021 IECC Will Significantly Help the State Achieve its Climate Goals

Lastly, the adoption of the 2021 IECC codes aligns with the broader environmental and economic goals set forth for the state and is crucial to achieving the objectives laid out in Governor Whitmer’s MI Healthy Climate Plan. The Michigan Healthy Climate Plan (MIHCP) outlined key objectives to improve Michiganders’ well-being, including reducing climate emissions, improving health outcomes and strengthening the economy. Specified goals include reducing energy consumption by 30% by 2030 and reaching net-zero greenhouse gas emissions by 2050⁸. These targets underline the urgent need for comprehensive measures to enhance energy efficiency and curb emissions. Implementing energy-efficient building practices not only reduces energy bills for residents and businesses, but also decreases carbon emissions, improves indoor air quality, and bolsters resilience to climate change. Moving to the commercial 2021 IECC will reduce statewide CO₂ emissions by 10.0 MMT (30 years cumulative), equivalent to the emissions of about two million cars driven for one year and stimulate the creation of high-quality jobs across the state.⁹ **By adopting efficient energy codes like the unweakened 2021 IECC, Michigan can significantly contribute to meeting these targets.**

The 2021 IECC Brings Benefits to Michigan

The adoption of the unweakened 2021 IECC is a cost-effective way to gradually increase the level of efficiency of residential and commercial buildings. The 2021 IECC will reduce long-term energy use and costs for residents and businesses, advance Michigan’s workforce and economy and ensure that new construction in the state meets high standards of sustainability and resilience. Updating Michigan’s energy codes would be particularly beneficial for local governments and community partners, especially towards ensuring that newly constructed

⁸ [MI Healthy Climate Plan \(\[michigan.gov\]\(https://michigan.gov\)\)](https://michigan.gov/whitmer/0,4570,7-283_17037_17038_17039_17040_17041_17042_17043_17044_17045_17046_17047_17048_17049_17050_17051_17052_17053_17054_17055_17056_17057_17058_17059_17060_17061_17062_17063_17064_17065_17066_17067_17068_17069_17070_17071_17072_17073_17074_17075_17076_17077_17078_17079_17080_17081_17082_17083_17084_17085_17086_17087_17088_17089_17090_17091_17092_17093_17094_17095_17096_17097_17098_17099_17100_17101_17102_17103_17104_17105_17106_17107_17108_17109_17110_17111_17112_17113_17114_17115_17116_17117_17118_17119_17120_17121_17122_17123_17124_17125_17126_17127_17128_17129_17130_17131_17132_17133_17134_17135_17136_17137_17138_17139_17140_17141_17142_17143_17144_17145_17146_17147_17148_17149_17150_17151_17152_17153_17154_17155_17156_17157_17158_17159_17160_17161_17162_17163_17164_17165_17166_17167_17168_17169_17170_17171_17172_17173_17174_17175_17176_17177_17178_17179_17180_17181_17182_17183_17184_17185_17186_17187_17188_17189_17190_17191_17192_17193_17194_17195_17196_17197_17198_17199_17200_17201_17202_17203_17204_17205_17206_17207_17208_17209_17210_17211_17212_17213_17214_17215_17216_17217_17218_17219_17220_17221_17222_17223_17224_17225_17226_17227_17228_17229_17230_17231_17232_17233_17234_17235_17236_17237_17238_17239_17240_17241_17242_17243_17244_17245_17246_17247_17248_17249_17250_17251_17252_17253_17254_17255_17256_17257_17258_17259_17260_17261_17262_17263_17264_17265_17266_17267_17268_17269_17270_17271_17272_17273_17274_17275_17276_17277_17278_17279_17280_17281_17282_17283_17284_17285_17286_17287_17288_17289_17290_17291_17292_17293_17294_17295_17296_17297_17298_17299_17300_17301_17302_17303_17304_17305_17306_17307_17308_17309_17310_17311_17312_17313_17314_17315_17316_17317_17318_17319_17320_17321_17322_17323_17324_17325_17326_17327_17328_17329_17330_17331_17332_17333_17334_17335_17336_17337_17338_17339_17340_17341_17342_17343_17344_17345_17346_17347_17348_17349_17350_17351_17352_17353_17354_17355_17356_17357_17358_17359_17360_17361_17362_17363_17364_17365_17366_17367_17368_17369_17370_17371_17372_17373_17374_17375_17376_17377_17378_17379_17380_17381_17382_17383_17384_17385_17386_17387_17388_17389_17390_17391_17392_17393_17394_17395_17396_17397_17398_17399_17400_17401_17402_17403_17404_17405_17406_17407_17408_17409_17410_17411_17412_17413_17414_17415_17416_17417_17418_17419_17420_17421_17422_17423_17424_17425_17426_17427_17428_17429_17430_17431_17432_17433_17434_17435_17436_17437_17438_17439_17440_17441_17442_17443_17444_17445_17446_17447_17448_17449_17450_17451_17452_17453_17454_17455_17456_17457_17458_17459_17460_17461_17462_17463_17464_17465_17466_17467_17468_17469_17470_17471_17472_17473_17474_17475_17476_17477_17478_17479_17480_17481_17482_17483_17484_17485_17486_17487_17488_17489_17490_17491_17492_17493_17494_17495_17496_17497_17498_17499_17500_17501_17502_17503_17504_17505_17506_17507_17508_17509_17510_17511_17512_17513_17514_17515_17516_17517_17518_17519_17520_17521_17522_17523_17524_17525_17526_17527_17528_17529_17530_17531_17532_17533_17534_17535_17536_17537_17538_17539_17540_17541_17542_17543_17544_17545_17546_17547_17548_17549_17550_17551_17552_17553_17554_17555_17556_17557_17558_17559_17560_17561_17562_17563_17564_17565_17566_17567_17568_17569_17570_17571_17572_17573_17574_17575_17576_17577_17578_17579_17580_17581_17582_17583_17584_17585_17586_17587_17588_17589_17590_17591_17592_17593_17594_17595_17596_17597_17598_17599_17600_17601_17602_17603_17604_17605_17606_17607_17608_17609_17610_17611_17612_17613_17614_17615_17616_17617_17618_17619_17620_17621_17622_17623_17624_17625_17626_17627_17628_17629_17630_17631_17632_17633_17634_17635_17636_17637_17638_17639_17640_17641_17642_17643_17644_17645_17646_17647_17648_17649_17650_17651_17652_17653_17654_17655_17656_17657_17658_17659_17660_17661_17662_17663_17664_17665_17666_17667_17668_17669_17670_17671_17672_17673_17674_17675_17676_17677_17678_17679_17680_17681_17682_17683_17684_17685_17686_17687_17688_17689_17690_17691_17692_17693_17694_17695_17696_17697_17698_17699_17700_17701_17702_17703_17704_17705_17706_17707_17708_17709_17710_17711_17712_17713_17714_17715_17716_17717_17718_17719_17720_17721_17722_17723_17724_17725_17726_17727_17728_17729_17730_17731_17732_17733_17734_17735_17736_17737_17738_17739_17740_17741_17742_17743_17744_17745_17746_17747_17748_17749_17750_17751_17752_17753_17754_17755_17756_17757_17758_17759_17760_17761_17762_17763_17764_17765_17766_17767_17768_17769_17770_17771_17772_17773_17774_17775_17776_17777_17778_17779_17780_17781_17782_17783_17784_17785_17786_17787_17788_17789_17790_17791_17792_17793_17794_17795_17796_17797_17798_17799_17800_17801_17802_17803_17804_17805_17806_17807_17808_17809_17810_17811_17812_17813_17814_17815_17816_17817_17818_17819_17820_17821_17822_17823_17824_17825_17826_17827_17828_17829_17830_17831_17832_17833_17834_17835_17836_17837_17838_17839_17840_17841_17842_17843_17844_17845_17846_17847_17848_17849_17850_17851_17852_17853_17854_17855_17856_17857_17858_17859_17860_17861_17862_17863_17864_17865_17866_17867_17868_17869_17870_17871_17872_17873_17874_17875_17876_17877_17878_17879_17880_17881_17882_17883_17884_17885_17886_17887_17888_17889_17890_17891_17892_17893_17894_17895_17896_17897_17898_17899_17900_17901_17902_17903_17904_17905_17906_17907_17908_17909_17910_17911_17912_17913_17914_17915_17916_17917_17918_17919_17920_17921_17922_17923_17924_17925_17926_17927_17928_17929_17930_17931_17932_17933_17934_17935_17936_17937_17938_17939_17940_17941_17942_17943_17944_17945_17946_17947_17948_17949_17950_17951_17952_17953_17954_17955_17956_17957_17958_17959_17960_17961_17962_17963_17964_17965_17966_17967_17968_17969_17970_17971_17972_17973_17974_17975_17976_17977_17978_17979_17980_17981_17982_17983_17984_17985_17986_17987_17988_17989_17990_17991_17992_17993_17994_17995_17996_17997_17998_17999_18000)

⁹ [Cost-Effectiveness of ANSI/ASHRAE/IES Standard 90.1-2019 for Michigan, 2021](#)



20 N. Wacker Drive, Suite 1301
Chicago, Illinois 60606

312.587.8390 [Main Line](tel:312.587.8390)

312.587.8391 [Fax](tel:312.587.8391)

www.mwalliance.org

affordable housing in underserved communities is healthier, safer, more comfortable, resilient, and efficient.

If you have any questions about these comments, noted reports and references, or general impact and analysis of building energy codes, please contact Isabella Gross, Building Codes & Policy Associate for MEEA, at igross@mwalliance.org. Thank you for your consideration.

Sincerely,

Paige Knutsen

Executive Director