

NYCECC PERFORMANCE PILOT STUDY

Each successive version of the Energy Code requires an improvement over the previous version. The past few Code cycles have seen diminishing returns relative to prescriptive requirements. As such, for buildings 25,000 sf and greater, there is a move to adopt a performance-based Energy Code. Much like an energy model, a Performance-based Code establishes a comparative baseline for energy consumption, as opposed to enforcing specific prescriptive measures for different building systems.

Adopting Performance-based Codes – and replacing Prescriptive Codes – helps to move NYC toward achieving its goal of carbon neutrality by 2050. Considering that buildings generate about 68% of NYC's greenhouse gas emissions, ensuring they are as efficient as possible is critical to meeting that goal and, in turn, protecting New Yorkers and the environment in the long term.

The New York City Department of Buildings will pilot a 100% performance-based version of the New York City Energy Conservation Code through a Performance Pilot Study conducted in partnership with Pacific Northwest National Laboratory (PNNL), located in Richland, Washington.

In support of a future Performance-based energy Code, PNNL has developed two new compliance pathways. One will be a whole building performance path, similar to the ASHRAE Standard 90.1 Appendix G Performance Rating Method compliance option but customized to meet NYC policy goals and Energy Code requirements. The other pathway, and the focus of the pilot, will be a system performance trade-off path. This option will include an expanded set of mandatory requirements and performance-based approaches for envelope, lighting and HVAC systems. The level of effort to document compliance in the **system performance trade-off path** is much less resource intensive than whole building energy modeling, and similar to that of a COMcheck report.

New York City Department of Buildings is seeking volunteer participants for this pilot study to use simple Performance-based Code Compliance Tools developed by PNNL to test the system performance trade-off path.

New buildings with one or more of the following occupancy types are eligible to participate: office, retail, multifamily, and schools. Additions and alterations of the same occupancy types may be considered on a case by case basis. By evaluating the energy efficiency of a select group of buildings, the Department and PNNL will evaluate feasibility of making these tools available for compliance with future versions of the NYCECC.

- Envelope systems will be evaluated using an upgraded COMcheck, a software tool built by PNNL to assist in Energy Code compliance.
- Lighting systems will be evaluated using a yet unnamed systems tool developed by PNNL.
- HVAC systems will be evaluated using the Total Systems Performance Ratio module in DOE's Asset Score software, which was also developed by PNNL.

Participants will be asked to use inputs from current or future projects which will give them an opportunity to test new tools and inform the future energy efficacy of those applications. Once a baseline is established, the findings from the Performance Pilot Project Study will inform the Department of Buildings on compliance metrics and metric targets for the 2025 NYCECC Performance-based Codes.

To express an interest in participating, please email EnergyCodePilot@buildings.nyc.gov.

REFERENCES

- **Performance Based Code Compliance** – https://www.energycodes.gov/sites/default/files/2021-07/Performance-Based_Code_Compliance_Roadmap_Final.pdf
- **Total Systems Performance Ratio @ Asset score** – <https://help.buildingenergyscore.com/support/solutions/articles/8000081245-total-system-performance-ratio-in-asset-score>
- **Total Systems Performance Ratio Training** – https://buildingenergyscore.energy.gov/documents/TSPR_Training_Presentation_Slides_2020-06-03.pdf