

Chairwoman Reynolds Brown and Members of the Committee on the Environment:

My name is Alex Dews and I am the Executive Director of Green Building United. Through education, advocacy, and strategic initiatives, Green Building United promotes the development of buildings that are sustainable, healthy for inhabitants, resilient, and cost-effective. Our community is made up of architects, engineers, policy makers and advocates, landscape architects, marketing and communications professionals, developers, contractors, building managers, building owners, government employees, and more.

I thank you all for the opportunity to provide testimony on behalf of Green Building United in support of **Bill 190600**, entitled “Building Energy Performance Policy,” to require owners of certain large buildings to conduct tune-ups of their energy and water systems.

Philadelphians are already feeling the local impacts of global climate change in the form of heat waves, frequent heavy rain events, and increasingly volatile and severe weather throughout the year. The City, under Mayor Jim Kenney, has committed to fighting climate change locally by pledging to reduce citywide carbon emissions by 80 percent by 2050. City Council too has reconfirmed its leadership by committing to 100 percent clean, renewable energy supply by the year 2050 citywide. Now, we must continue to put programs in place that will help us reach our goals.

Buildings and industry make up the vast majority of citywide carbon emissions in Philadelphia at **79 percent**, so energy efficiency and clean, renewable energy are the key drivers to help us reach this goal. **Philadelphia can have a direct and significant impact on reducing local carbon emissions by improving the efficiency of its largest buildings.**

Reducing building energy use through periodic tune-ups is an important first step to accelerating Philadelphia’s progress toward its climate goals.

### **>> What is a building tune up?**

Building tune-ups consist of an inspection and implementation of operational and maintenance improvements to improve energy and water efficiency in an existing building. Common fixes identified through the tune-up process include eliminating heating and cooling conflicts and shutting off equipment when spaces are vacant or occupancy is low<sup>1</sup>.

Building tune-ups are focused on no- and low-cost changes that a building owner can make to save energy and water that can and, where legislation requires, must be completed in a short time window. The actionable nature of a tune up prioritizes **realized** energy and water use reduction and cost

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<sup>1</sup> [https://www.seattle.gov/Documents/Departments/OSE/Tune-Ups/OSE\\_BTU\\_COMMON\\_MEASURES.pdf](https://www.seattle.gov/Documents/Departments/OSE/Tune-Ups/OSE_BTU_COMMON_MEASURES.pdf)

savings. Per research conducted by the Pacific Northwest National Laboratory, on average, tune-ups save 10-15 percent in energy and the upfront investment pays back in 2-3 years<sup>2</sup>. The City of Philadelphia's pilot tune up of the Juvenile Justice Center, a 6-year-old building, resulted in a building tune up cost of about \$0.05 to \$0.08 per square foot with savings of \$0.15 per square foot.

Tune-ups differ from energy audits, which are required in some cities, including New York City and Atlanta. The scope of audits can be more expansive, including operational changes as well as capital investments a building can make to save a larger amount of energy and water, but typically on a longer timetable. Research on New York's Local Law 87 (which has required audits and retro commissioning since 2013) has found that while the potential for savings in an audit is high, building owners are less likely to take any action on the results of energy audits because of the broad scope of work and longer return on investment.

### **>> Who benefits from a building tune-up?**

#### Building owners

Building tune-ups are known for their emphasis on operations and maintenance improvements that save energy right away and pay back the cost of evaluation in a short time period. Even the most efficiently built and technologically advanced building benefits from periodic recalibration and repairs.

Those who have implemented no energy efficiency measures will likely have the most to gain. The average commercial building wastes 30 percent<sup>3</sup> of the energy it consumes. The lack of regular operations and maintenance<sup>4</sup> in a building reduces the lifespan of equipment and results in inefficiencies that increase energy use and costs.

#### Building occupants

Adjustments to lighting levels, temperature, and humidity in a building tune-up can lead to improved visual and thermal comfort and better indoor air quality for building occupants<sup>5</sup>. This in turn improves learning outcomes in schools, worker productivity in offices, and shortens stays in healthcare facilities.

#### Local economy

There are already 7,268<sup>6</sup> energy efficiency jobs in Philadelphia, per E2's 2019 Clean Jobs Pennsylvania Report. A building tune-up requirement presents an opportunity to grow the existing local base of building specialists that can perform this important cost-, energy-, and carbon-saving work.

#### All Philadelphians

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<sup>2</sup> <https://buildingretuning.pnnl.gov/publications/PNNL-ACT-10055.pdf>

<sup>3</sup> <http://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/save-energy>

<sup>4</sup> <http://buildingretuning.pnnl.gov/>

<sup>5</sup> <https://www.ny-engineers.com/blog/benefits-of-retro-commissioning>

<sup>6</sup> <https://www.e2.org/wp-content/uploads/2019/06/E2-Clean-Jobs-Pennsylvania-2019.pdf>

Per the City of Philadelphia's Powering Our Future report<sup>7</sup>, a building tune-up program has the potential to save \$55 million citywide annually and to reduce carbon emissions by 183,380 metric tons, the equivalent<sup>8</sup> of 21,959 homes' energy use for one year.

### **>> Why is this policy a good fit for Philadelphia?**

Tune-ups also build on the information that Philadelphia's buildings have been collecting and reporting on since 2012 when the energy benchmarking program was first passed into law. All buildings 50,000 square feet or larger are required to track and disclose their energy and water use on an annual basis to the City of Philadelphia. This information is shared publicly through the City of Philadelphia's Data Visualization tool, helping tenants and building owners and managers compare the relative performance of buildings citywide.

Per the Office of Sustainability, buildings required to benchmark have reduced energy use<sup>9</sup> by more than 5 percent each year over the span of the program. More than 150 buildings have achieved ENERGY STAR Certification, up from fewer than 75 that achieved this distinction before benchmarking was required. Benchmarking demonstrates that awareness translates to action in buildings – building tune-ups will bring another level of awareness to building owners and operators that translates to measurable action.

### **>>Considerations to improve legislative language and prepare for implementation:**

- Inspection and Implementation Requirements
  - Specify building assessment steps and corrective actions (voluntary and mandatory) in regulations. Use Seattle's Building Assessment Guidelines<sup>10</sup> as a starting point for Philadelphia's requirements.
  - Clarify whether multifamily buildings, hotels, and residence halls are included or excluded by the legislation.
- Timeline
  - Lengthen the period for inspections from no earlier than 9 months and no later than 4 months from the compliance deadline to ensure that the local workforce can assist all buildings needing to comply.
- Exemptions
  - Specify what the baseline is from which buildings can reduce their energy use by 15 percent in order to qualify for an exemption.
  - Maintain continuous commissioning exemption but define parameters through regulations.
  - Change the parameters around ENERGY STAR Certification as an exemption. In particular, the requirement that the building receive its certification the year immediately preceding its compliance deadline year. A building must submit a full

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<sup>7</sup> <http://www.phila.gov/media/20180821150658/Powering-Our-Future-Full-Report.pdf>

<sup>8</sup> <http://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>

<sup>9</sup> Weather-normalized savings figures from the Office of Sustainability.

<sup>10</sup> [https://www.seattle.gov/Documents/Departments/OSE/Tune-Ups/OSE\\_BTU\\_OWNER'S%20GUIDE.pdf](https://www.seattle.gov/Documents/Departments/OSE/Tune-Ups/OSE_BTU_OWNER'S%20GUIDE.pdf)

calendar year of energy data as part of its certification process meaning that it cannot apply for certification until January of its compliance deadline year but must be certified and submit the appropriate evidence of such certification to the City by the end of March to meet the 180-day-out deadline for exemptions.

- Share which buildings have been exempted and what exemption path they have achieved via a public list or in the benchmarking visualization tool to further recognize high-performing buildings. A public list or the visualization tool could also contain information on which buildings are/are not in compliance as well as a building's next compliance deadline to help connect service providers and building owners.
- Specify in regulations the turnaround time for an exemption request so that buildings that are denied can budget enough time to comply with the requirements.
- Training and Workforce Development
  - Ensure qualified tune-up specialist and supervisor credentials are not too restrictive to limit participation but not so expansive that unqualified providers are jeopardizing maximum savings for building owners and operators. The current requirement that a specialist must be a licensed professional engineer is too restrictive. We suggest adding Certified Energy Managers to the list at a minimum.
  - Compile a list of qualified professionals with contact information. Green Building United's searchable database of energy efficiency and sustainability companies in the region, The Hub<sup>11</sup>, can serve this need.
  - Require professionals performing inspections to attending in-person training or complete webinar to ensure that they understand the scope of the required assessment. Include information on utilities incentives or rebates that could help defray costs.
  - Encourage building staff to engage with the inspection process.

**>> What else needs to be done to decarbonize the building sector?**

Achieving Philadelphia's climate goals will require an aggressive set of strategies for decarbonizing the building sector. An **energy efficiency-first strategy** can help accelerate Philadelphia's carbon emissions reduction while providing important co-benefits to residents.

<p><b><u>Accelerate Decarbonization</u></b></p> <p><u>Reduce Demand in All Buildings</u> Energy efficiency reduces the demand for energy in buildings and makes meeting electricity needs with renewable energy cheaper and easier. Prioritizing large buildings for energy efficiency helps to scale aggregate energy savings faster.</p> <p><u>Beneficial Electrification</u> Electrifying all buildings, personal vehicles, and large fleets will add significant demand to the electricity grid.</p>	<p><b><u>Reap Co-benefits</u></b></p> <p><u>Save Money</u> The average commercial building wastes 30 percent of the energy it uses, making conservation and efficiency effective savings strategies.</p> <p><u>Improve Health</u> The quality of our buildings impacts health and comfort, as people spend as much as 90 percent of their time indoors.</p>
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<sup>11</sup> <https://greenbuildingunited.org/thehub>

Aggressive energy efficiency efforts coupled with increased clean energy generation are necessary to meet this need without increasing carbon emissions.

Prioritize Existing Buildings and the Residential Sector

Even if we mandated net-zero carbon new construction tomorrow, two-thirds of the building area that exists today will still exist in 2050, underscoring the importance of existing building retrofits to achieve carbon emissions reductions in the building sector.

While Green Building United agrees that tune-ups are best directed at the non-residential large building sector, we must also work towards addressing energy savings opportunities in small commercial, multifamily, and single family residences as well.

Grow the Economy

Nearly 69,000 Pennsylvanians make a living in energy efficiency jobs, a figure that will continue to grow with existing building retrofits and more efficient new construction on the rise.

**>> Conclusion**

We thank you for your consideration of **Bill 190600** and our testimony. We hope that you will favorably pass this bill out of committee today and encourage the full Council to pass this bill as soon as possible.