



# Sustainability Agenda

**Purpose:** Address all Sustainability comments in the Staff Report for Park City Base Development and highlight integrated approach to Sustainable Design.

Sustainability Commitments

Resolution 28-2017/32-2018

- Net-zero Energy
- On-Site Energy Production
- Reduce Energy Consumption + High Performance Envelope+ Appropriately Designed Systems
- Monitoring & Verification

Energy Modeler & Commissioning

Waste

EVCS

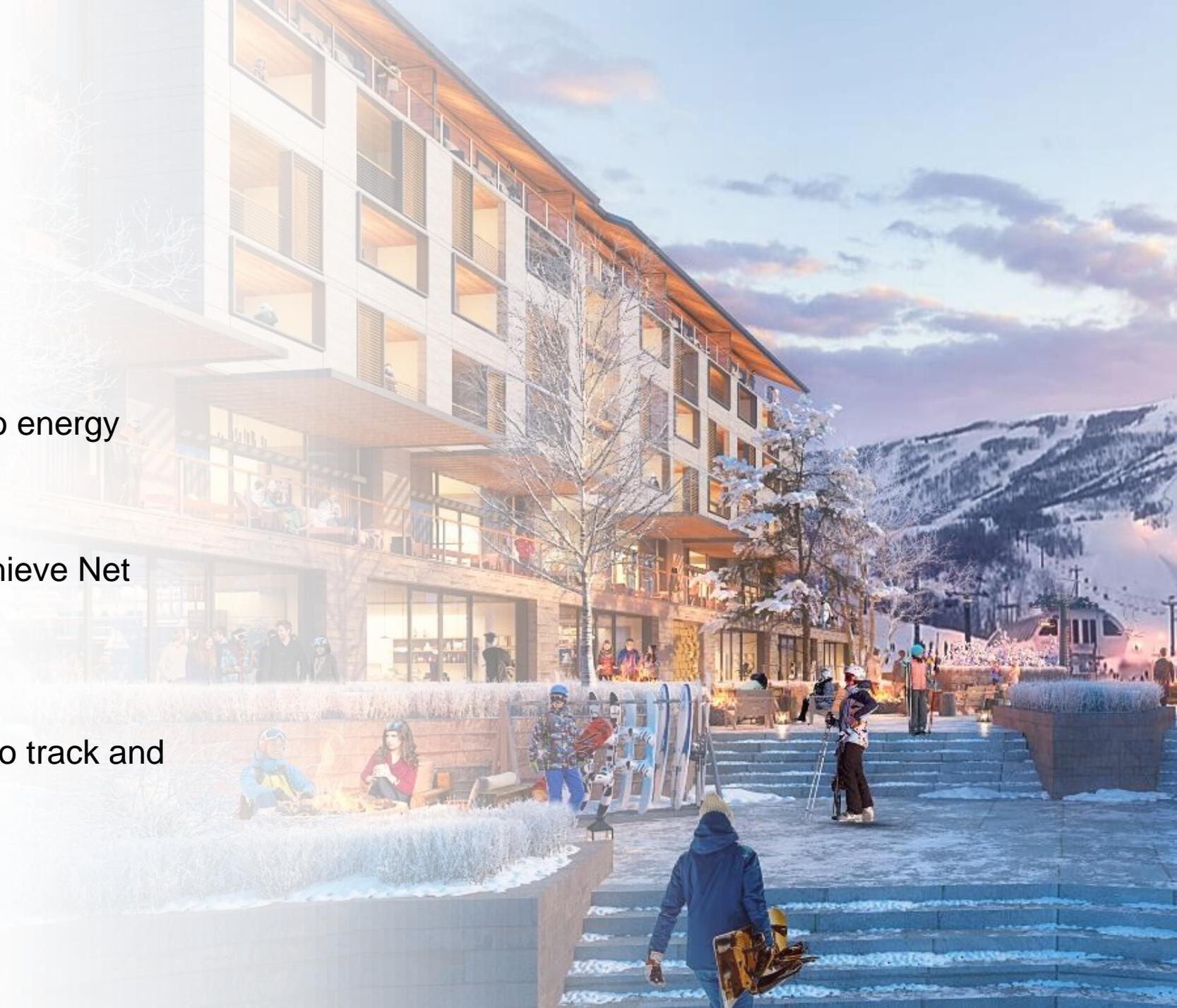


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# Sustainability Commitments

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- Target a 15% savings compared to energy code with a stretch goal of 20%
- Pathway for All-Electric Buildings
- On-site renewables + RECs to achieve Net Zero Energy
- Integrate energy modeling and commissioning
- Utilize energy management tools to track and verify building performance
- Create waste management plans
- Provide EVCS in parking garages



# Resolution 28-2017/32-2018

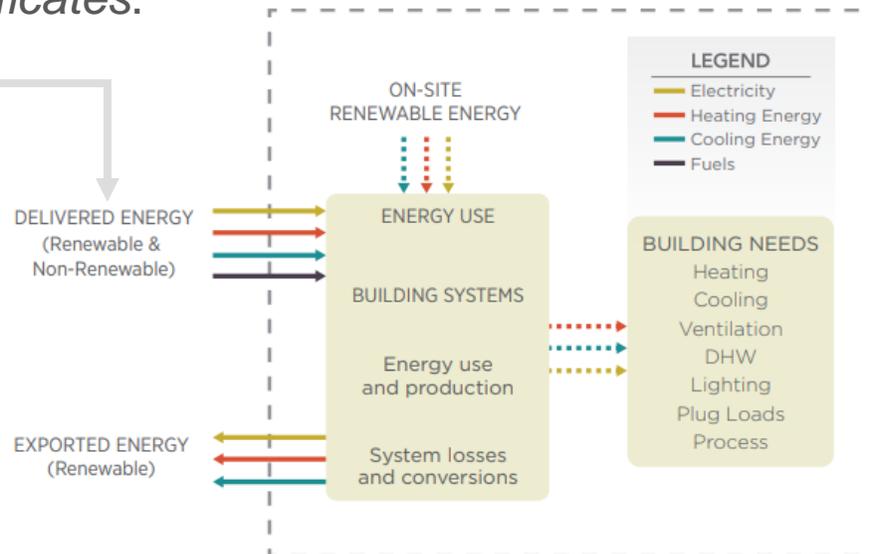


# Net-Zero Energy



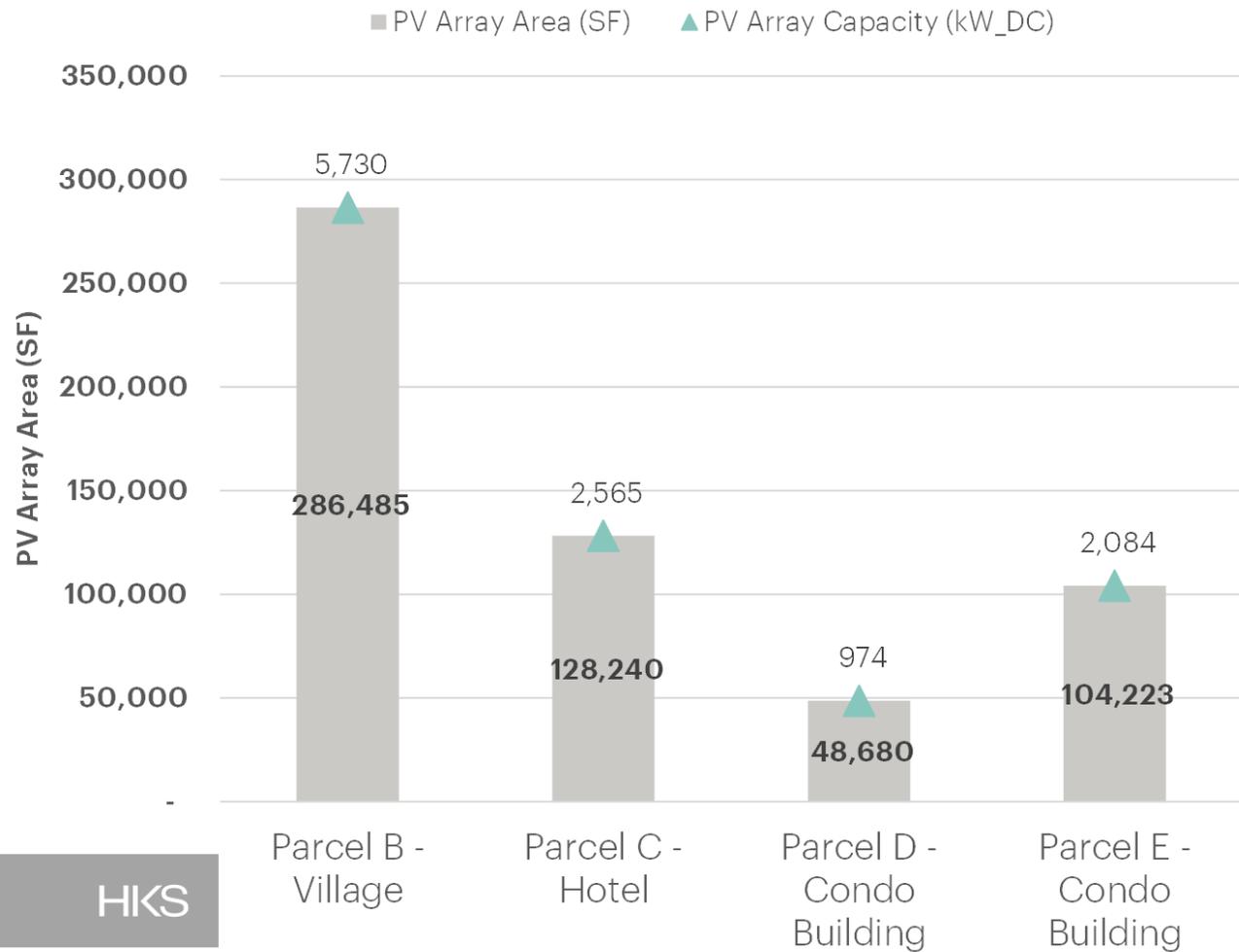
The Park City Base Development chooses to comply with Resolution 28-2017/32-2018 by aligning with the **REC-ZEB** definition at the Community scale.

- Renewable Energy Certificate Zero Energy Building (REC-ZEB) where thru actual annual measurements the *delivered energy* is less than or equal to the *on-site renewable exported energy* plus renewable *Energy Certificates*.

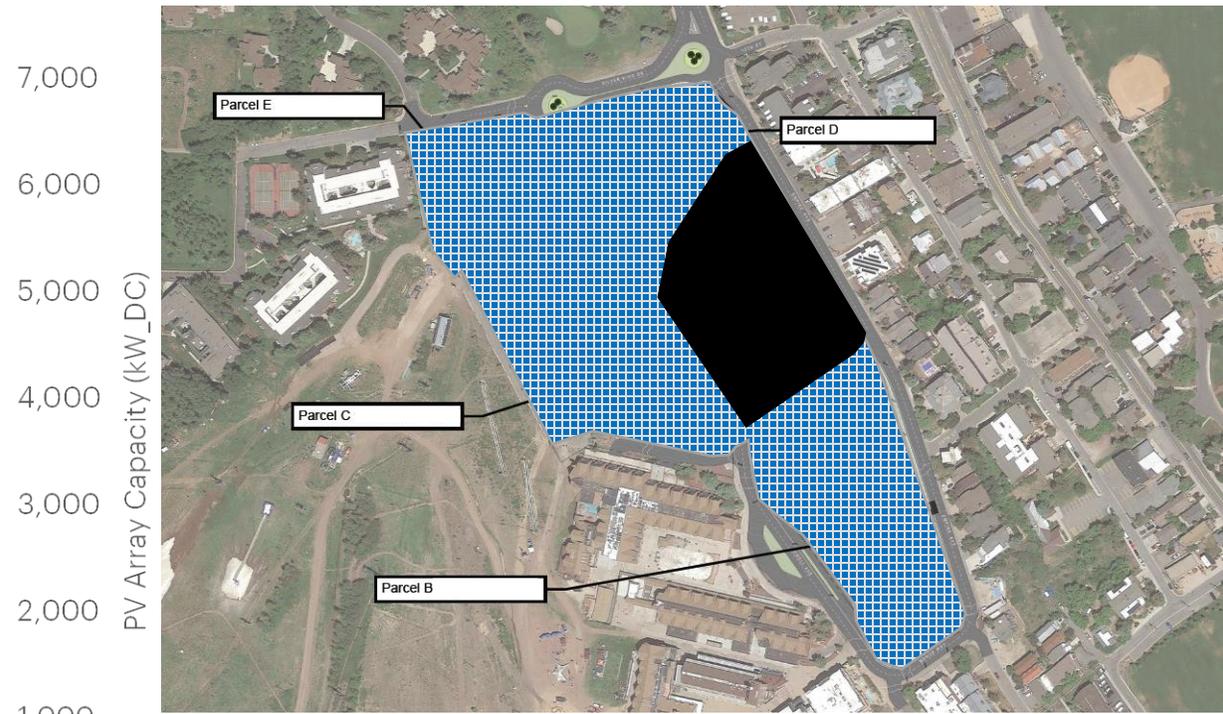


# PV Area Requirements

PV Array Design Sizing for ZEB  
(Code Compliant Building)



Park City Base Development Plan



To achieve **ZEB**, a district-scale renewable energy system (photovoltaics) sized to generate more than 18,000,000 kWh annually would need to be commissioned that extends over 13 acres of land (minimum).

# On-Site Energy Production



To reduce the environmental and economic harms associated with fossil fuel energy consumption, the Park City Base Development intends on evaluating the on-site renewable energy requirements of achieving Net Zero Energy for the parking program on each Parcel (excludes EVCS).

- The estimated energy requirements for all Parcels (parking) is 1,100,000 kWh annually where a 678<sub>kWDC</sub> photovoltaic array (33,906 ft<sup>2</sup> or ¾ of an acre) would need to be commissioned.
- The renewable energy generated would be equivalent to the emissions from 168 passenger vehicles driven for one year or 90 homes' energy use for one year.
- To meet the Community REC-ZEB definition, the Park City Base Development will supply up to 6% of the site's energy demands with on-site renewable energy and purchase Renewable Energy Credits for the remainder of delivered energy to the site.
- Roof Areas will be reserved to integrate photovoltaic panels. Additionally, areas not utilized will be planned to be PV ready so that additional panels can be installed in the future.



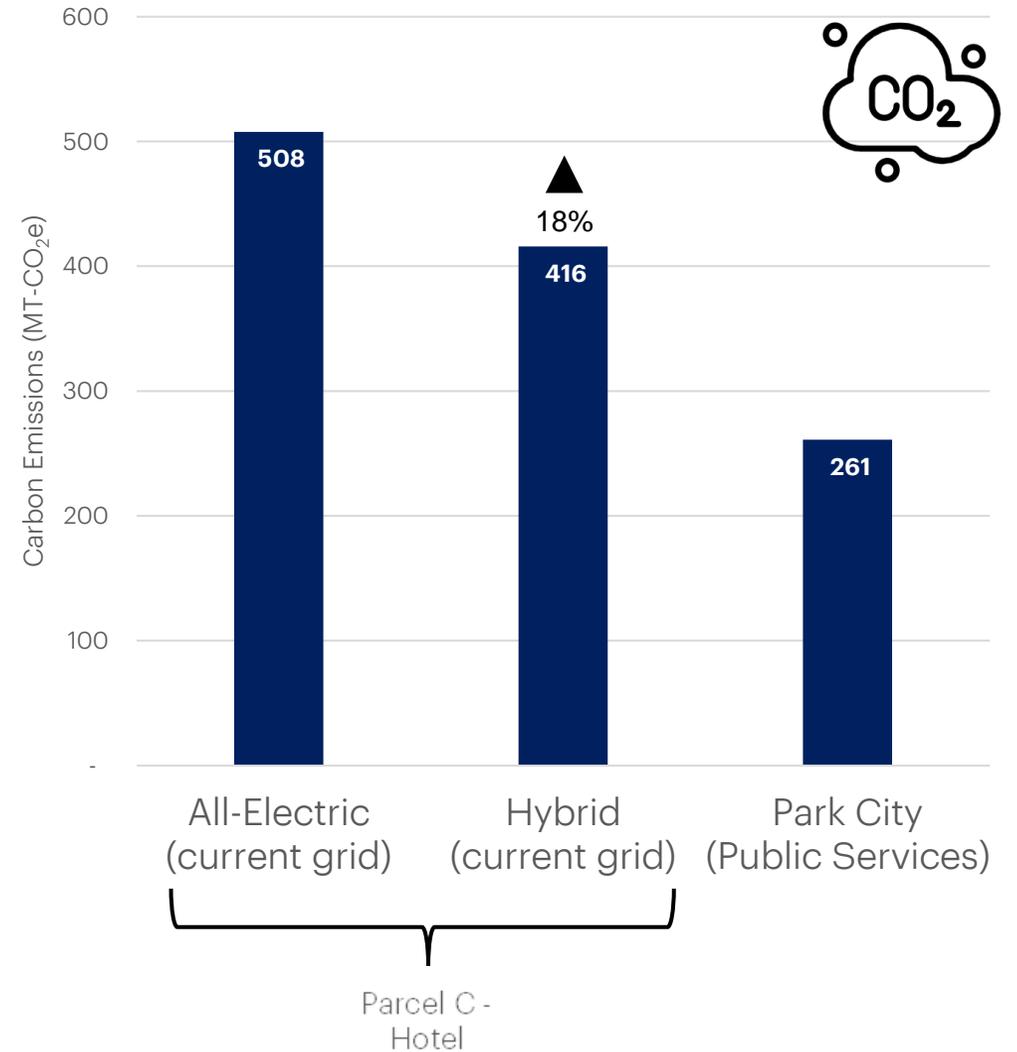
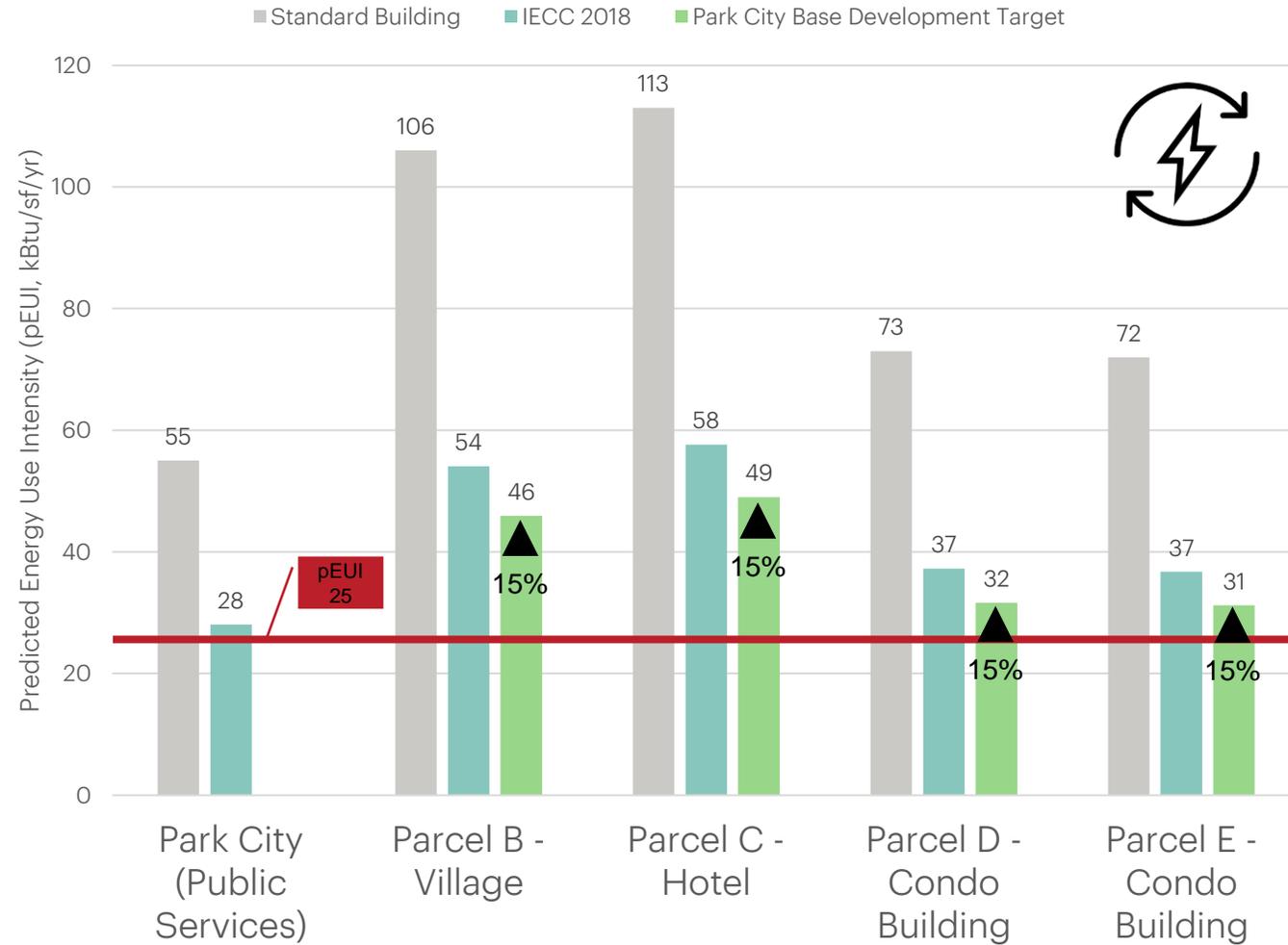
# Reduce Energy Consumption + High Performance Envelope + Appropriately Designed Systems



- Building performance simulation (energy modeling) is guiding the project to reduce energy consumption and to optimize envelope and mechanical system performance (target setting for EUI).
- The Park City Base Development is setting an energy performance goal of improving, at a minimum, 15% above energy code, with a stretch goal of 20%.
- The pathway to an all-electric development will initially include Parcels that will utilize Electric Heat Pumps with some program that will utilize on-site boilers (natural gas) for primary heating.
- A future phase-in plan for an electric boiler will be integrated once the local grid moves towards higher renewable energy penetration (transition to an all-electric development).



# EUI and Carbon Comparison



# Monitoring & Verification



The intent of Monitoring & Verification is to provide greater transparency to how the goals of the Park City Base Development are being achieved.

- Utilizing ENERGY STAR Portfolio Manger (or similar energy management tools, TBD) will provide an interactive energy management tool for the Park City Base Development to track and assess **energy**, **water** and **waste** on all Parcels.
- Primary utility meters will interconnect for automatic reporting (REC purchases will be tracked).
- Account for a Measurement & Verification Plan to benchmark performance, compare back to design (energy model), and create feedback loop to inform decisions that will improve energy efficiency over time (in-operation).
- A commissioning plan shall be developed to support the design, construction, and operation of the Park City Base Development.



# Waste

To minimize construction waste and refuse in the local landfill, the Park City Base Development will consider:

- Integrating a waste management plan for construction waste.
- Developing a waste management plan to reduce landfill waste that is generated by building occupant (accommodations for dedicated areas for recycling and sorting).



## Electric Vehicle Charging Stations (EVCS)

To support Resolution 28-2017/32-2018 Scope 3 (transportation) emission reductions, the Park City Base Development:

- Install 10 Electric Vehicle Charging Stations within each parking garage with accommodations for ADA accessibility.
- Include an additional 65 stalls that will be EV ready
  - Conduit will be routed to appropriately sized panels (no wiring). This will avoid any material waste associated with future electric vehicle supply equipment (EVSE) requirements.



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