



**pennsylvania**  
GREENGOV COUNCIL

**2020**  
**ANNUAL REPORT**



**pennsylvania**  
DEPARTMENT OF CONSERVATION  
AND NATURAL RESOURCES



**pennsylvania**  
DEPARTMENT OF GENERAL SERVICES



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL  
PROTECTION

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# Message from Governor Tom Wolf



2020 was a year of major changes, and for too many Pennsylvanians, included personal tragedy and hardship brought on by the COVID-19 pandemic. Protecting our health and the health of our communities continues to be our primary focus for 2021. The new year also brings great hope for vaccine deployment and other measures of financial assistance to help us

transition back to the normal life we all desire.

Even as my administration has worked to address the many challenges presented by COVID-19, our work has continued to address other threats to the commonwealth, and our world. Nowhere is this continued focus more evident than our efforts to combat climate change, the most critical environmental threat confronting the world.

As communities across Pennsylvania who have been affected by flooding, heat waves, or prolonged drought know all too well, the dangers brought on by climate change are affecting Pennsylvanians right now, endangering both lives and livelihoods. Climate change is responsible for negative health impacts, financial hardship and economic distress. All too often, these costs are disproportionately placed onto our most vulnerable citizens. Like the current pandemic, climate change requires us to work together and do our part, as the impacts cross political boundaries and ideology.

The climate goal for Pennsylvania that I set in 2019 is our commitment to do our part to combat this global threat. I want to congratulate agencies for their continued climate leadership during the pandemic. Commonwealth agencies, in conjunction with the GreenGov Council, must continue to incorporate climate, sustainability and resilience measures into programs and business processes that we administer for Pennsylvanians.

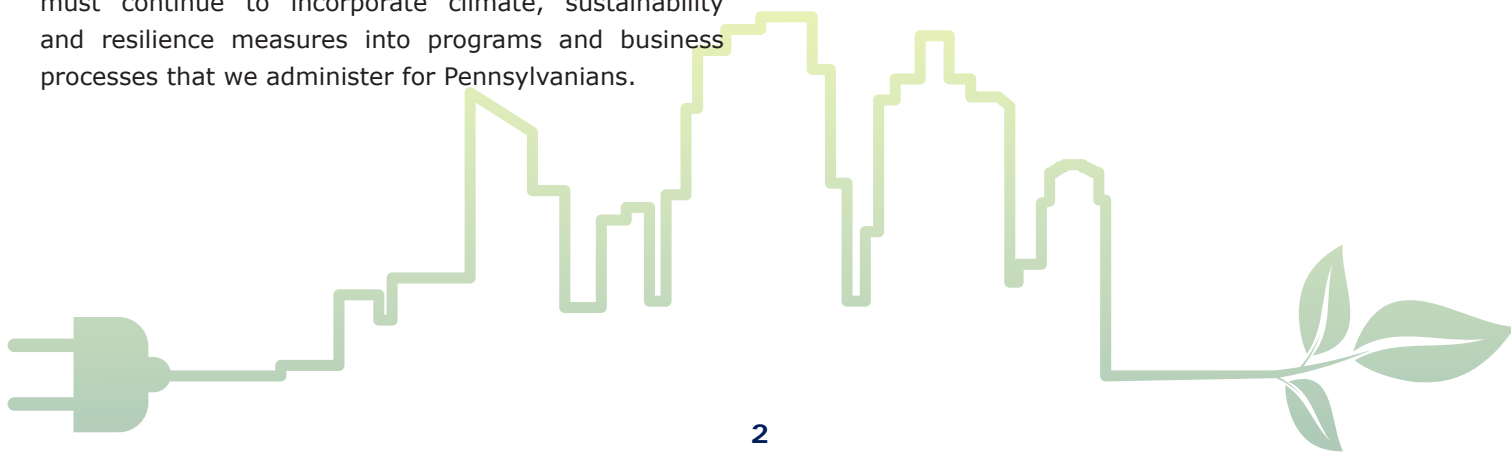
In addition to the GreenGov Council activities described in this report, my administration continues working on several other multi-state partnerships and regulations to further mitigate greenhouse gas emissions such as:

- Department of Environmental Protection (DEP) is working to support Pennsylvania's participation in the Regional Greenhouse Gas Initiative (RGGI), a carbon cap and trade program, with other northeast and mid-Atlantic states.
- DEP and Department of Transportation (PennDOT) are supporting Pennsylvania's MOU with 15 other states to increase adoption of Medium and Heavy-Duty Zero-Emission Vehicles in those states.
- Pennsylvania has signed on to a Memorandum of Understanding (MOU) with six other states in a Regional Carbon Dioxide (CO<sub>2</sub>) Transport Infrastructure Action Plan to support the capture of carbon dioxide from energy producing and industrial facilities and transport for permanent geologic storage.
- DEP is finalizing stringent new regulations to reduce volatile organic compound and methane emissions from natural gas well sites and other infrastructure.

I encourage you to read this report; to become inspired by the actions described within its pages; and to join us in our efforts to combat climate change, protect our health, protect our citizens and protect our environment through the use of energy sustainability and energy conservation best practices.

A handwritten signature in black ink that reads "Tom Wolf".

Tom Wolf  
Governor



# Executive Summary

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The GreenGov Council is pleased to provide our second annual report detailing work to advance Governor Wolf's [Executive Order 2019-01: Commonwealth Leadership in Addressing Climate Change and Promoting Energy Conservation and Sustainable Governance](#). On January 8, 2019, Governor Wolf signed the Executive Order which established the first ever statewide goal to reduce carbon pollution, and to empower commonwealth agencies to lead-by-example in support of this effort.

The report is intended to serve as an annual benchmark measurement of Executive Order goals, summarize achievements to date, and provide recommendations to commonwealth agencies for continuous improvement on sustainability.

In 2020, the commonwealth has demonstrated progress on the four primary Executive Order goals as follows:

- A 6.2% normalized energy reduction within commonwealth facilities from the previous year with actual cost savings of over \$6.5 million. During this period, the commonwealth expanded and improved its energy utility tracking covering all agencies commonwealth-paid electricity, natural gas and steam accounts.
- 308,978 MWhs of Renewable Energy Credits (RECs) were procured for 2020, offsetting 40% of the commonwealth's total electricity load for the year. This purchase ranks the commonwealth #46 on the U.S. EPA's Green Power Partnership National [Top 100 list](#).
- Commonwealth agency vehicle miles traveled is down from the 2019 reporting year, substantially reducing transportation carbon emissions.
- Seventeen new buildings or major renovation facilities projects in the construction or renovation queue are incorporating the Executive Order's high-performance building criteria into design and construction.

## **Agency 'Lead-By-Example' Highlights & Achievements**

Commonwealth agencies have made notable progress on sustainability initiatives throughout 2020. During this difficult year with COVID-19 impacts and changes to many agency business processes, the commonwealth continued to implement the Executive Order in many ways. Highlights of these achievements include:

- For the second year, 30 agencies conducted an internal review of their sustainable business processes and submitted their GreenGov Agency Certification Checklists – demonstrating their commitment to and progress in meeting sustainability and efficiency goals.
- The Department of Environmental Protection's (DEP) Energy Programs Office partnered with the Department of General Services' (DGS) Bureau of Real Estate to develop a high-performance lease roadmap. The roadmap will be used to guide high-performance lease contracting in upcoming years.
- The DGS Bureau of Procurement was awarded a 2020 EPEAT Purchaser Award through the [Green Electronic Council](#) for its excellence in purchasing sustainable electronics.
- The DGS Bureau of Vehicle Management added nine conventional gas hybrid vehicles to the state procurement contract, providing agencies additional options to improve fuel economy and reduce emissions from our traveling fleet.
- In 2020, the Department of Conservation & Natural Resources (DCNR) completed installation of the 104kW Laurel Hill Scenic View solar array in Laurel Hill State Park. Public electric vehicle charging stations were also installed at multiple state park locations including: Ohiopyle, Bald Eagle Nature Inn, Tiadaghton State Forest (Pine Creek Rail Trail), Tioga State Forest (Pine Creek Rail Trail), Caledonia, Gifford Pinchot, King's Gap, Little Buffalo and Shawnee.
- The Department of Corrections (DOC) committed to participate in the U.S. Department of Energy's Sustainable Correction Infrastructure Partnership (SCIP) Accelerator. This federal program will help DOC facilities explore opportunities to save energy and/or integrate renewable energy and energy storage into their operations.
- DEP provided training opportunities for management staff to learn about climate impacts along with opportunities to become certified Climate Change Professionals (CC-P) through the Association of Climate Change Officers. DEP is continuing to investigate along with additional agencies and the Green Gov Council the establishment of a Commonwealth-wide Climate Academy.

# 1. Introduction

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[Executive Order 2019-01](#): *Commonwealth Leadership in Addressing Climate Change and Promoting Energy Conservation and Sustainable Governance* directs agencies under the Governor’s jurisdiction to lead-by-example and participate in Pennsylvania’s climate goal of reducing net greenhouse gas emissions 26% by 2025, and an 80% by 2050 (from 2005 levels). The Executive Order’s goals and framework were established with the intent to create accountability, benchmark performance and accelerate policies in state government to reduce carbon pollution.

The GreenGov Council is responsible for reporting the commonwealth’s progress on the Executive Order’s “*Performance Goals for State Agencies*.” The performance goals are intended to be the foundation, by which commonwealth agencies strive to support the ambitious climate goals created for Pennsylvania. The *Performance Goals for State Agencies* are as follows:

- Reduce overall energy consumption by 3% per year through 2025 (from 2017 levels);
- Replace 25% of the state passenger fleet with Battery Electric Vehicles (BEVs) and Plug-In Hybrid Electric Vehicles (PHEVs) by 2025, and evaluate opportunities to reduce vehicle miles traveled;
- Procure renewable energy to offset at least 40% of the commonwealth’s annual electricity, and/or directly purchase renewable power generation sited within PA;
- Build any new buildings, major renovations, build to suit leased buildings to high-performance building standards.

## **About the Annual Report**

The GreenGov Council has developed several tools and strategies to track and highlight progress – as well as demonstrate transparency and accountability towards our goals. These methods will continue to be refined to foster a more robust understanding of the commonwealth’s carbon footprint and explore new pathways forward for increasing environmentally sustainable operations. A brief description of the GreenGov benchmarking tools and strategies are described below.

**A.) Commonwealth Utility Benchmarking Initiative:** In early 2018, the commonwealth began the delivery of a utility benchmarking initiative. This benchmarking involves managing our utility bills within a common online platform, so that building performance can be tracked over time. The

Commonwealth of Pennsylvania stands to save energy and money from this initiative, as facility managers and financial staff use benchmarking to identify operational improvement opportunities, and steer capital investment planning through identification of underperforming buildings.

The commonwealth’s utility benchmarking initiative is supported by [EnergyCAP](#), a Pennsylvania-registered veteran-owned small business. Penn State Facility Engineering Institute, or [PSFEI](#), is assisting the commonwealth in the management and implementation steps necessary to support this enterprise-wide benchmarking effort.

The initiative directly informs progress on the Executive Order goals of 3% per year reductions. The results are summarized in Section 2.

**B.) Fleet Vehicle Accounting & Tracking:** The DGS Bureau of Vehicle Management, PennDOT’s Bureau of Maintenance and Operations, and the PA Turnpike Commission manage the commonwealth’s fleet vehicles. These include all motorized vehicles in Classes 1-8 (as defined by the Federal Highway Administration or FHWA), from light-duty passenger vehicles to heavy-duty road clearing snowplow vehicles, for example. Different strategies are employed to track and analyze vehicles, including the use of telematics systems, fleet refueling card data analysis, and other business tracking methods deployed by these agencies. The combination of tools and business processes provide a comprehensive accounting of the estimated vehicle miles traveled and fuel consumption for the commonwealth fleet over the defined one-year period.

Fleet Vehicle Accounting & Tracking is used to report progress on the Executive Order goal to transition the passenger fleet to battery electric or plug-in hybrid vehicles by 2025, and our environmental impacts from annual vehicle miles traveled. The results are summarized in Section 3.

**C.) GreenGov Agency Certification Checklist:** The GreenGov Agency Certification Checklist (Checklist) was developed by GreenGov for the purpose of assessing agencies’ progress delivering sustainability within government operations and achieving the *Performance Goals for State Agencies* identified in the Executive Order. The Checklist serves as an annual assessment completed by each participating agency. Agencies will be able to assess their progress over

time, compare their performance and initiatives with other similarly structured agencies, and identify new opportunities to green government.

The Checklist consists of the following performance categories: Benchmarking and Evaluation; Buildings and Structures; Transportation; Products and Materials; Culture; Renewable Energy; and Resilience. It will be used as an evaluation tool that “looks back” on the accomplishments of the previous fiscal year, starting with FY 19/20.

Agency GreenGov Agency Certification Checklist results are found in Section 6.

**D.) GreenGov Focus Groups:** The GreenGov Focus Groups are small-group interagency working groups that meet quarterly to discuss barriers and solutions to various sustainability-related topics. These six groups work to advance the Governor’s Executive

Order goals and integrate solutions into agency business practices. All agencies are encouraged to participate in any groups that impact their business areas. Participants are encouraged to integrate ideas and strategies within their agency to support enhancing their GreenGov Agency Checklist scores in future years.

The six focus groups are identified below:

- a. Utility Management
- b. Small Agency (Sustainability)
- c. EV and EV Charging
- d. Green Facility Management
- e. Products and Recycling
- f. Facility Construction & Leasing

GreenGov Focus group activities and plans for 2021 are found in Section 7.



*Electric motorcycle and plug-in hybrid vehicle at Governor Ridge Environmental Center, Presque Isle State Park.*

## 2. Agency Energy Reductions

The purpose of the Commonwealth Utility Benchmarking Initiative is to develop, maintain and support an enterprise-wide building energy and utility management program. The initiative encourages agencies to identify energy and utility cost savings opportunities in the buildings they occupy (for those buildings where the commonwealth pays the utility bills directly). This is accomplished by giving agencies access to their utility data, which can be viewed through various online dashboards and reports, showing usage, costs and bill anomalies, for example. The data rolled-up in various customizable reporting configurations is useful to facility managers and financial planners evaluating energy performance and its cost/budget implications from year-to-year in a building, or across the agency portfolio. Prior to 2018, an enterprise-wide energy management and tracking platform was not available, and agencies were limited to tracking on their own spreadsheets or by other methods.

For the GreenGov Council, this Initiative supports measuring and accounting for commonwealth agencies achievements toward the Governor’s goal of reducing

energy consumption 3% per year. Penn State Facilities Engineering Institute (PSFEI) assists the commonwealth with analyzing more than 8,000 electric, gas, and steam meters to create a fair assessment of where the commonwealth stands with our executive order goal.

**Reduce Overall Energy Consumption by 3% Per Year by 2025**  
(from 2017 levels)

This year PSFEI validated a total of 6,959, or 84%, of the 8,283 known metered accounts that passed established validation reporting criteria. For a utility meter account to meet the validation reporting criteria, the account must have two bills or less missing in the 24-month evaluation period. Weather normalization is then applied to the validated accounts. Weather normalization adjusts energy usage so it can be compared to energy usage in other years, eliminating weather as a factor in energy consumption to present a fair comparison.

Table 1:



FACILITIES ENGINEERING INSTITUTE

Commonwealth Energy Consumption  
FY2018-2019 - FY2019-2020

State Reporting Agency	Normalized Use (MMBtu)	Known Meter Count	% of Meters Reported	FY 2018 Baseline MMBtus	FY 2019 Current MMBtus	Energy Reduction	Metric Tons CO2 Reduction
Dept of Corrections		273	87%	1,939,596	1,783,745	-8.0%	12971
Dept of Human Services		78	81%	775,220	716,738	-7.5%	4715
Dept of General Services		78	91%	672,511	602,995	-10.3%	6534
Dept of Military and Veterans Affairs		790	93%	634,146	704,713	11.1%	3513
Dept of Transportation		3,382	82%	366,759	334,103	-8.9%	2762
PA State Police		1,124	87%	134,491	132,848	-1.2%	113
Dept of Conservation and Natural Resources		1,925	82%	103,807	89,691	-13.6%	1418
Dept of Labor and Industry		11	91%	63,864	47,772	-25.2%	858
Dept of Agriculture		11	73%	48,345	32,739	-32.3%	1033
PA Fish and Boat Commission		93	85%	44,525	41,886	-5.9%	235
PA Emergency Management Agency		12	50%	26,131	20,109	-23.0%	592
Dept of Environmental Protection		121	78%	24,017	22,887	-4.7%	95
PA Historical and Museum Commission		147	92%	23,515	21,601	-8.1%	170
PA Game Commission		228	79%	12,911	12,681	-1.8%	52
Dept of Revenue		7	29%	10,845	11,170	3.0%	8
Dept of Health		3	100%	9,688	9,803	1.2%	(3)
		<b>8,283</b>	<b>84%</b>	<b>4,890,370</b>	<b>4,585,481</b>	<b>-6.2%</b>	<b>35,067</b>

\* Energy consumption is weather normalized, removing weather anomalies and season variations. This allows for fair and direct comparisons from year-to-year in energy consumption.

\* Multiple agencies energy consumption is rolled-up under Department of General Services (DGS), since DGS owns and operates buildings for many commonwealth agencies.

\* A portion of the commonwealth agencies reside in lease space. Due to existing lease agreements, lessors pay the utility bills. Therefore, the commonwealth is currently not positioned to report all energy consumption for all occupied spaces.

PSFEI compared weather normalized energy consumption in 2018/19 to **actual consumption in 2019/20 fiscal year, with results indicating a combined 6.2% decrease in energy consumption.** Table 1 shows the breakdown by agency and the percent of meters that are currently reporting two fiscal years. The commonwealth exceeded our 3% reduction goal, however, it is important to note that a portion of this energy savings can likely be attributed to the effect COVID-19 had on building occupancy – the Governor issued the first stay-at-home order on March 23, 2020 for designated counties, followed by a statewide order on April 1, 2020. The reporting year for measuring energy consumption ended on June 30, 2020, therefore, there were a full three months of commonwealth buildings being minimally occupied for a quarter of the reporting year.

In general, the building occupancy and corresponding energy load was altered in the Spring of 2020, but building operations continued due to a combination of essential employees remaining in the workplace during this time, and the implementation of safe building operation regarding COVID-19 mitigation efforts. Agencies implemented social distancing protocols, enhanced cleaning protocols, changed-out and upgrading air filters, adjusted air intakes and humidity controls to meet or exceed the Centers for Disease Control and Prevention (CDC) recommendations. While more air conditioning and air circulation was required to keep the buildings operational, the commonwealth still realized a 6.2% reduction in energy consumption. This practice has continued into the 2021, with the anticipation that additional energy savings will be gained from lower levels of occupancy throughout a full fiscal year in next year's GreenGov report.

COVID-19 was not the full story for the 6.2% decrease in consumption. Some agencies, such as Department of Corrections (DOC), were generally unchanged in terms of operation due to COVID impacts. These large energy-using facilities remain open and occupied throughout the pandemic. Table 1 shows that DOC continued to reduce energy consumption by 8% during this reporting year. DOC is an example of an agency that continues to add projects to our Guaranteed Energy Savings Act or [GESA program](#).

The GESA program uses a progressive contracting process that enables mass upgrades of building components such as lighting, HVAC, water, etc. to be replaced through a budget neutral process. These upgrades significantly reduce energy usage, which result in decreased utility spending and serve as a vehicle to decrease growing utility

costs in commonwealth facilities. Table 2 shows recent GESA projects and the project status. A continued active portfolio of GESA projects will continue to drive down energy consumption and support the Executive Order energy savings goals. Visit [Energy Savings Performance Contracting through Pennsylvania's Guaranteed Energy Savings Act \(GESA\)](#) for more detailed information on the GESA program and its delivery in the commonwealth.

In this reporting year, the State Police Headquarters project completed its required two years of Measurement and Verification. The Department of Conservation and Natural Resources (DCNR) west region project, comprising various facilities in western Pennsylvania state parks and forests has completed construction, with Measurement and Verification currently underway. In addition, the Department of Corrections (DOC) Muncy and Houtzdale facilities, as well as DCNR central region locations began construction during this reporting year. Three projects from PennDOT, DGS, and Fish & Boat Commission have entered the Investment Grade Audit phase of the GESA process. Finally, DOC added one new project, SCI Fayette, which is just getting started with Contractor Selection.



*Installation of the central chiller plant as part of the Capitol Complex GESA project.*



Table 2:



DGS GESA Projects  
Delivery and Savings Summary 2020

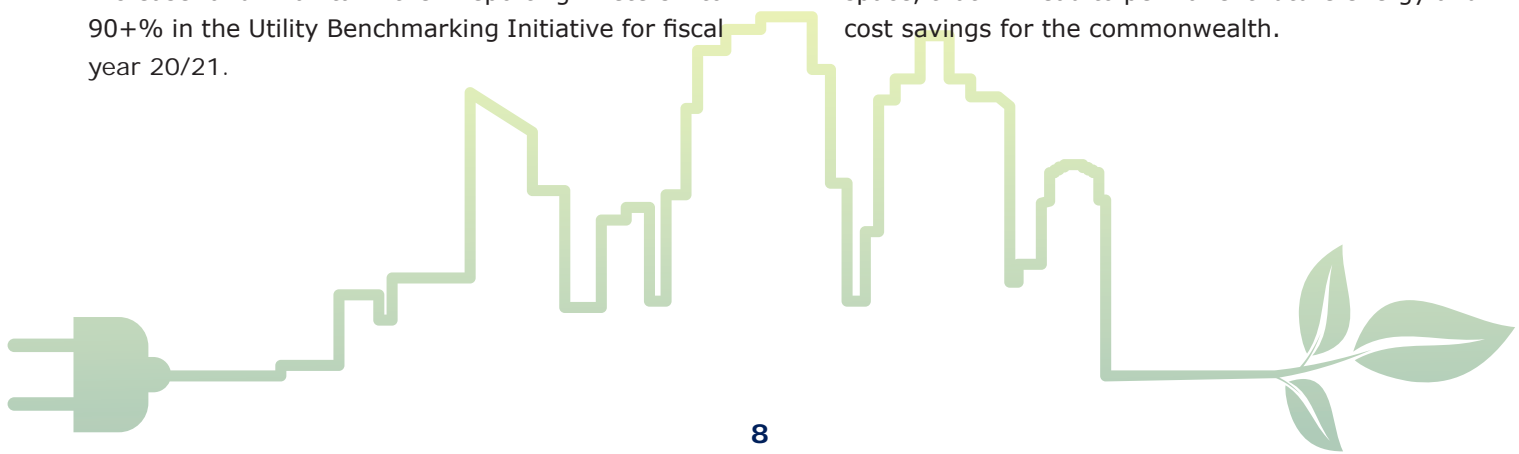
Num.	Agency	Location	Project Description & Delivery			Annual Energy Savings*			Annual Environmental Benefits*				
			Energy Conservation Measures (ECMs)	Status	Substantial Construction Completion	Value (M)	KWH	Dollars	Cars Mitigated	Trees Planted	Home Energy Use Saved	CO2 Tons Saved	
1	DOC	SCI Dallas	Lighting, water, boiler & sewage	Completed	7/1/2016	\$20.00	2,137,857	\$2,200,000	341	4,123	172	1757	
2	PSP	Harrisburg Headquarters	Lighting, water & boiler	Completed	2/1/2018	\$5.10	2,849,225	\$295,097	454	5,378	224	2339	
3	DGS	Keystone Building	Lighting & controls	Measurement, Verification	1/23/2018	\$3.00	2,403,190	\$329,677	383	4,635	193	1,789	
4	PASSHE	Thaddeus Stevens College	Lighting, controls, steam	Measurement, Verification	3/25/2019	\$2.70	1,030,172	\$137,305	190	2,301	96	979	
5	DCNR	West Region, Parks & Forests	Lighting & HVAC systems, building envelope	Measurement, Verification	2/29/2020	\$5.50	2,814,916	\$375,182	436	5,282	220	2,247	
6	DHS	Selinsgrove Center	Lighting, water, boilers & weatherization	Construction	2/15/2020	\$5.60	1,901,322	\$253,415	395	4,784	199	2,035	
7	DGS	Capitol Complex	Lighting, window film, water systems, chillers	Construction	2/29/2021	\$18.20	9,003,360	\$1,200,000	1,390	16,826	701	6,368	
8	DOC	SCI Muncy	Lighting, solar, steam traps, windows, AC, EMSs	Construction	4/1/2021	\$18.30	2,773,465	\$469,904	424	3,242	226	2,162	
9	DOC	SCI Houtzdale	Lighting, water, HVAC	Construction	11/30/2021	\$30.50	4,293,351	\$1,170,814	970	7,427	518	4,492	
10	DCNR	Central Region, Parks & Forests	Lighting, solar, sludge, BMS, electric to gas, geothermal	Construction	11/30/2021	\$16.40	2,135,128	\$243,361	321	2,496	181	1,664	
11	DOT	District 8 Facility	Lighting, weatherization, water conservation, fuel switches, steam traps	Investment Grade Audit	6/15/2022	\$5.00	TBD	TBD	TBD	TBD	TBD	TBD	
12	DGS	DGS Capitol Complex 2	Lighting, weatherization, HVAC upgrades/fuel switches, geothermal	Investment Grade Audit	6/15/2022	\$15.00	TBD	TBD	TBD	TBD	TBD	TBD	
13	FBC	Hatchery Facilities State-Wide	Lighting, weatherization, HVAC upgrades/fuel switches, water recovery	Investment Grade Audit	6/15/2022	\$5.00	TBD	TBD	TBD	TBD	TBD	TBD	
14	DOC	SCI Fayette	TBD	Contractor Selection	12/15/2022	TBD	TBD	TBD	TBD	TBD	TBD	TBD	
*Annual Savings & Benefits are Estimated						<b>Totals:</b>	<b>\$150.30</b>	<b>31,341,986</b>	<b>\$6,674,755</b>	<b>5,304</b>	<b>56,494</b>	<b>2,730</b>	<b>25,832</b>

**GreenGov Recommendations to Agencies**

Each year, the GreenGov Council makes recommendations to commonwealth agencies based on opportunities that may support or enhance progress toward the Executive Order goals and initiatives. These recommendations may be new or a continuation (or expansion) of previous annual report recommendations. GreenGov Council recommendations may evolve over time based on new information, a changing landscape, or a deeper understanding of the issues and solutions. Building energy reduction recommendations are as follows:

- Increase and maintain the “reporting meters” to 90+% in the Utility Benchmarking Initiative for fiscal year 20/21.

- Capture facility square footage to determine Energy Use Intensity (EUI) figures (often expressed in thousands of British Thermal Units per square foot per year – kBtu/sf/yr). This type of metric is useful to compare building performance across the portfolio and supports executive-level reporting.
- Continue to identify GESA project opportunities, as a primary method to drive down energy costs without tapping into capital budgets.
- Integrate permanent telework options for employees, with a primary objective to consolidate operational space, that will lead to permanent future energy and cost savings for the commonwealth.



### 3. Passenger Fleet Electrification & Vehicle Miles Traveled

The number of vehicles in the commonwealth’s fleet fluctuates due to vehicle turnover and replacements, therefore the goal of converting 25% of the state passenger fleet to electric vehicles by 2025 is reevaluated on an annual basis. The DGS Bureau of Vehicle Management, PennDOT’s Bureau of Maintenance and Operations, and the PA Turnpike Commission agreed to use a consistent definition for “passenger vehicle” for the purposes of aligning data sets across agencies for a consistent fleet benchmarking of the Governor’s goal.

For the purpose of the executive order, “passenger vehicle” is defined using Federal Highway Administration’s Vehicle Class 1 & 2. In addition, the passenger vehicle definition excludes pick-up trucks and law enforcement vehicles. Table 3 shows the commonwealth vehicle fleet

in all Classes 1-8, compared to the defined “passenger vehicle” portion of the fleet. As of November 30, 2020, there were 4,204 passenger vehicles in the commonwealth fleet. The electric vehicle goal was calculated based on 3,870 eligible vehicles. This sets our current Executive Order electrification goal at 967 vehicles by 2025.

**Replace 25% of the state passenger fleet with Battery Electric Vehicles (BEVs) and Plug-In Hybrid Electric Vehicles (PHEVs) by 2025, and evaluate opportunities to reduce vehicle miles traveled (VMT)**

**Table 3:**



**Commonwealth Agency Vehicle Fleet\* - Counts, Consumption & Emissions  
2019 vs. 2020 - Rolling Annual Report Ending in November**

Vehicle Classification	Total Vehicle Count		Vehicle Miles Traveled		Fuel Consumption (Gasoline & Diesel Gallons)		Average Miles per Gallon		Carbon Emissions (Metric Tons) **	
	2019†	2020	2019†	2020	2019†	2020	2019†	2020	2019†	2020
<b>All (Classes 1-8)</b>	20,477	20,940	233,281,997	214,495,509	19,177,412	17,231,008	12.16	12.45	170,430	153,132
<b>Passenger†† (Class 1-2)</b>	3960	4,204	54,106,130	48,070,127	2,176,315	1,712,478	24.86	28.07	19,341	15,219

\* Rental vehicle & personal vehicle use not included

† PA Turnpike fleet not included

\*\* Electric vehicle carbon emissions not included

†† Law enforcement vehicles & pickup trucks not included

Table 3 also shows business fleet vehicle miles traveled (VMT), fuel consumption, average miles per gallon, and estimated carbon emissions for the commonwealth. In the 2019 GreenGov Annual Report, the PA Turnpike was excluded from the analysis, due to the timing of our request for information. The 2020 figures presented in this report represent the first reporting year showing a complete record of the entire commonwealth traveling fleet, which supports Executive Order VMT tracking.

Due to the COVID-19 pandemic, the Governor issued a stay-at-home order for all 67 counties starting on April 1, 2020. The 2020 reporting year (ending November 2020) represents a full eight months of COVID impacts to our traveling fleet. Even with the additions of PA Turnpike

vehicles in the data set, the commonwealth shows reductions in VMT, fuel consumption and greenhouse gas emissions. These reductions were anticipated based on upon broad changes to our business operations and travel caused by the pandemic. Fuel economy (average miles per gallon) has also changed mainly due to the addition of the PA Turnpike’s fleet that has a different average miles per gallon figure altering the overall aggregate fuel economy. Going forward, further analysis with more data points, should yield clearer trends in our changing transportation practices and policies to support the Executive Order VMT reduction goals.

Table 4:



**Commonwealth Agency Electric Vehicle Fleet\* & EV Charging Plugs  
2019 vs. 2020 - Rolling Annual Report Ending in November**

Description	Equipment Type	Count 2019	Count 2020
Battery Electric Vehicles (BEVs)	Chevrolet Bolt, Ford Focus	6	5
Plug-In Hybrid Electric Vehicles (PHEVs)	Chevrolet Volt, Chrysler Pacifica, Ford Fusion	40**	40
Owned & Operated EV Charging Plugs	Level 2 Charging Plugs (240V)	18	19
25% Electric Vehicle Goal** (by 2025)	Battery Electric Vehicles (BEVs) Plug-In Hybrid Electric Vehicles (PHEVs)	990	967

\* PA Turnpike fleet not included

\*\* Figure corrected

As of November 30, 2020, the commonwealth had 45 electric vehicles in the fleet, comprised of five battery electric vehicles and 40 plug-in hybrid vehicles (Table 4). The commonwealth removed one BEV from service, due to mechanical problems. No electric vehicles were added in the 2020 reporting year.

2020 resulted in little progress in electric vehicle purchases and progress toward the Executive Order goal, primarily due to the global pandemic causing a lack of focus and investments on passenger fleet transportation. As indicated in Figure 1, the commonwealth is only 5% of the way to its 2025 goal.

In addition, the commonwealth has 19 level-2 workplace charging plugs installed for fleet vehicle use. Only one charging location was installed during 2020 for use in the Rachel Carson State Office Building.

The GreenGov Council believes there is enough time to achieve the electric vehicle goals, however action needs to occur in 2021. The commonwealth should focus attention on delivering workplace charging to support electric vehicle purchases. For most locations, charging equipment needs to be in place prior to the purchase of the electric vehicles. Reliance on retail public charging stations is neither practical nor a cost-competitive option to support the Commonwealth’s fleet either currently or into the future. Figure 2 shows a charging plug delivery pathway that allows for a gradual ramp-up of charging infrastructure deployed by commonwealth agencies. Hitting the target of 70 additional plugs available to our traveling fleet in 2021 would be obtainable. It would be conservative and necessary start for meeting this goal and provides a year for agencies to learn what is involved with electric vehicle charging infrastructure, including how to procure and construct these stations. In subsequent years, commonwealth agencies would collectively need to double (approximately) its efforts in 2022, and then again doubling in 2023. Dedicated workplace charging station availability will allow for agency automotive purchasing and management staff more comfort in procuring electric vehicle replacements.

Figure 1:

**Electric Vehicle Goal Progress**  
(25% of Passenger Fleet)

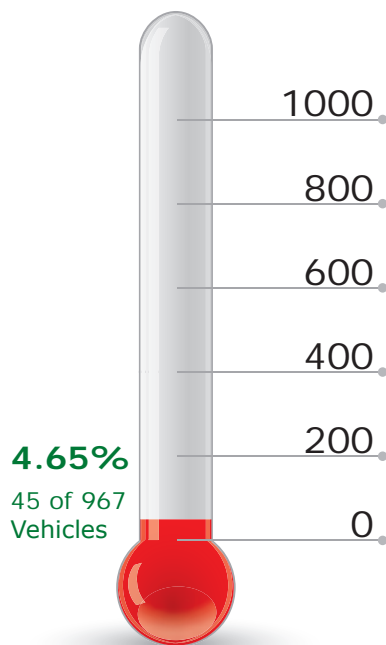
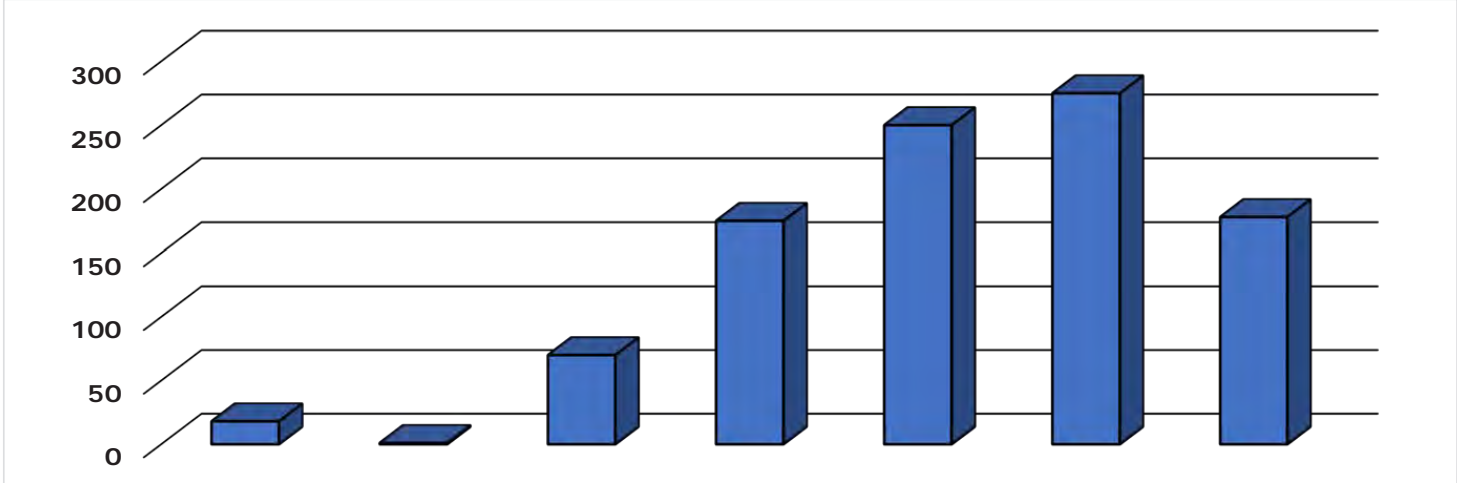


Figure 2:



Charging Plug Annual Delivery - Projected 967 Unit Goal

Year	2019	2020	2021	2022	2023	2024	2025
Count	18	1	70	175	250	275	178
Percentage Complete	1.86%	1.96%	9.20%	27.30%	53.15%	81.59%	100%



In 2020, the commonwealth was successful in expanding its overall fuel efficient and low-emission vehicle options. The Commonwealth added 9 vehicles to its state contract for fleet purchasing options. The new options are standard gasoline hybrid electric vehicles (HEV), but these options will improve fuel economy and lower emissions providing new opportunities for agencies going forward. The commonwealth plans to improve the overall fleet fuel economy with expanded use of electric and hybrid vehicles, taking advantage of their superior miles per gallon (mpg) performance over standard internal combustion vehicles.



Secretary Dunn speaks with DCNR Park Manager Jessica Lavelua, while dedicating EV charging station at Prince Gallitzin State Park. DCNR plans to install EV charging stations at 43 locations.

Table 5:



**Bureau of Vehicle Management  
Low-Emission Vehicles on State Contract**

Segment	Make	Model	Drive	Fuel	Procurement
<b>Compact/Midsize Sedan</b> (6)	Chevrolet	Bolt Electric Vehicle	FWD	BEV*	Carryover
	Ford	Police Responder Hybrid Sedan Base	FWD	HEV	Carryover
	Ford	Fusion Energi SE	FWD	PHEV*	Carryover
	Honda	Accord Hybrid	FWD	HEV	New**
	Toyota	Camry Hybrid	FWD	HEV	New**
	Ford	Special Service Plug In Hybrid Sedan	FWD	PHEV*	Carryover
<b>Large Sedan</b> (1)	Toyota	Avalon Hybrid 4DR XLE	FWD	HEV	New**
<b>Large SUV</b> (3)	Ford	Explorer Sport Utility Limited Hybrid	4WD	HEV	New**
	Ford	Explorer Sport Utility Limited Hybrid	4WD	HEV	New**
	Ford	Police Interceptor Utility, Int. Upgrade	4WD	HEV	Carryover
<b>Light Duty Pickup Truck</b> (8)	Ford	F-250 Crew Cab XL	4WD	Bi-Fuel (Gas & CNG)	Carryover
	Ford	F-250 Reg Cab XL	RWD	Bi-Fuel (Gas & CNG)	Carryover
	Ford	F-250 Reg Cab XL	4WD	Bi-Fuel (Gas & CNG)	Carryover
	Ford	F-250 SuperCab XL	4WD	Bi-Fuel (Gas & CNG)	Carryover
	Ford	F-350 SRW Crew Cab XL	4WD	Bi-Fuel (Gas & CNG)	Carryover
	Ford	F-350 SRW Reg Cab XL	4WD	Bi-Fuel (Gas & CNG)	Carryover
	Ford	F-350 SRW SuperCab XL	4WD	Bi-Fuel (Gas & CNG)	Carryover
	Ram	1500 Quad Cab HFE	RWD	HEV	New**
<b>Mini-Van</b> (1)	Chrysler	Pacifica	FWD	PHEV*	Carryover
<b>Small/Medium SUV</b> (4)	Ford	Escape Sport Utility SE Sport	AWD	HEV	New**
	Ford	Escape Sport Utility SE Sport	FWD	HEV	New**
	Ford	Escape Sport Utility SE Sport	FWD	PHEV*	Carryover
	Toyota	RAV4 Hybrid LE	AWD	HEV	New**

\* BEV & PHEV vehicles are specifically mandated within EO2019-01

\*\* Vehicles are new additions to the state procurement contract

Note: 14 models available in 2019 to 23 models in 2020 = 64% increase

**GreenGov Recommendations to Agencies**

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- Expand Battery Electric Vehicles and Plug-in Hybrid Vehicles on state contract and continue to prioritize replacing vehicles with the most fuel-efficient vehicles available in each class, including electric or conventional hybrid electric vehicles.

- Assess workplace charging locations statewide and deliver charging stations aligned with the schedule proposed by GreenGov Council (Figure 2).
- Develop permanent VMT reduction strategies based on lessons learned from maintaining business operations during the current COVID-19 pandemic. There are likely new ways to maintain a high-level commonwealth services by traveling less.

# 4. Energy Procurement & Renewable Energy Investments

DGS Bureau of Procurement procured [Green-e](#) certified Renewable Energy Credits (RECs) on behalf of commonwealth agencies for calendar year 2019 through 2021. For 2020, DGS procured 308,978 RECs at a cost of \$228,644 offsetting 40% of the commonwealth's total electricity load for the year. The RECs are derived from nationwide certified renewable energy sources. According to the EPA's Greenhouse Gas Equivalencies Calculator, the commonwealth's purchase leads to an annual offset of approximately 218,460 metric tons of carbon dioxide or the emission equivalent of the electricity use of roughly 25,209 average homes for a year.

The Executive Order has a stated performance goal of purchasing renewable energy equal to 40% of the commonwealth's annual electricity use. These REC

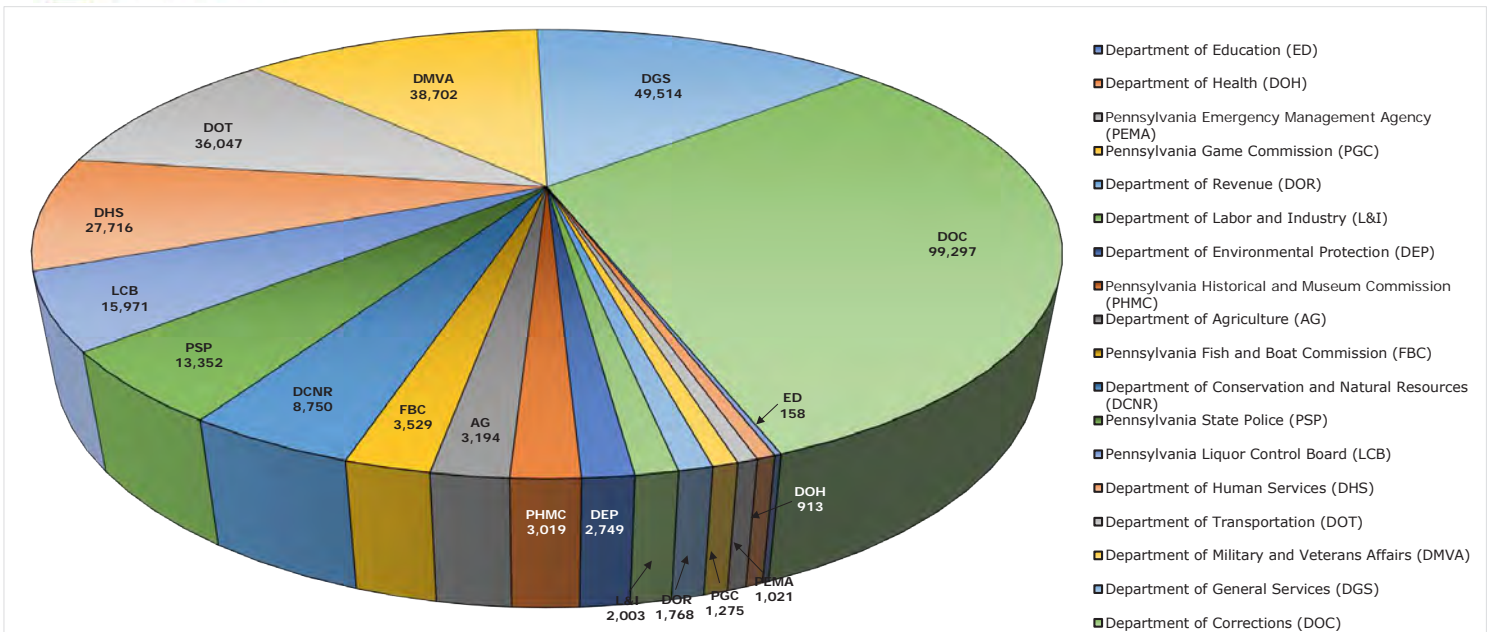
purchases are meeting the Executive Order, and have ranked the commonwealth at #46 on the U.S. EPA's Green Power Partnership National [Top 100 list](#). Figure 3 shows the REC apportionment by commonwealth agency in megawatt-hours.

**Procure renewable energy to offset at least 40% of the commonwealth's annual electricity, and/or directly purchase renewable power generation sited within PA**

Figure 3:



Renewable Energy Credits - 2020\* Apportionment by Agency\*\* (Megawatt-Hours)



\*Renewable Energy Credits are procured on a calendar year basis  
 \*\*PA State System of Higher Education RECs are not included in the 40% agency renewable energy goal

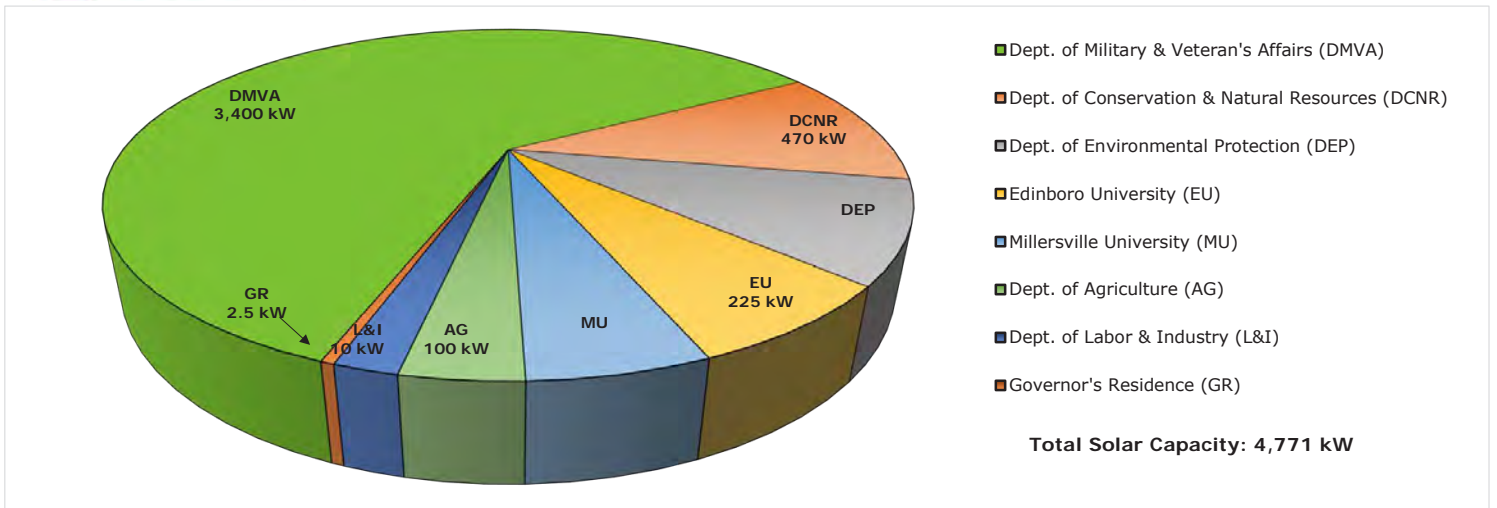
Additionally, the commonwealth has solar installations generating onsite electricity that have been in service for the past several years. Figure 4 serves a benchmark of these existing installations. In 2020, the Department of

Conservation & Natural Resources (DCNR) installed the 104kW Laurel Hill Scenic View solar array in Laurel Hill State Park.

Figure 4:



### Commonwealth Existing Solar Installations - 2020

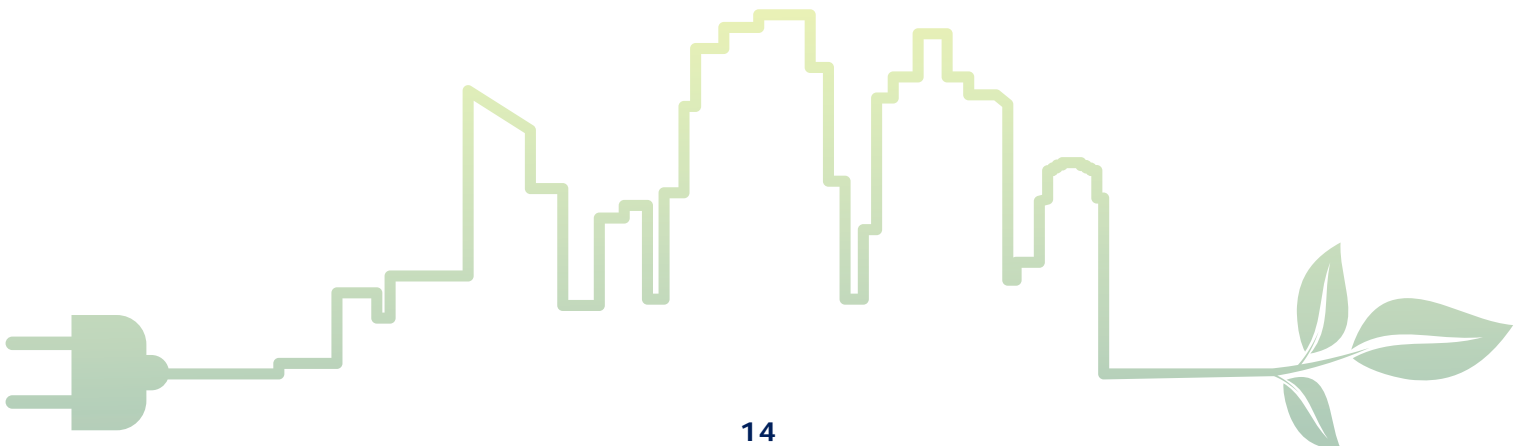


Both DCNR and Department of Military & Veterans Affairs (DMVA) have plans to expand solar in upcoming years. DCNR can install solar through its capital budget and annual maintenance budget processes. DMVA has the authority through its federal partnership to expand solar installations at their sites. However, challenges remain for other commonwealth agencies which desire to partner with private entities to enter solar production leases at their sites. At most commonwealth-owned facilities, the procurement code requires agencies to enter lease arrangements for no longer than five years, with additional lease extension opportunities five years at a time. The base five-year lease maximum prevents the long-term property control necessary for the financing of many solar installation contracts. The GreenGov is working with agencies to explore options to make on-site solar leasing on commonwealth-owned property a greater possibility.

### GreenGov Recommendations to Agencies

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- Partner in developing an on-site solar power purchase agreement (PPA) model for use on commonwealth-owned property.
- Collectively locate and benchmark 30-50 commonwealth-owned sites: identifying the best properties for solar investments.
- Develop a comprehensive inspection and maintenance program for existing commonwealth solar installations.



## 5. High Performance Buildings

Any new building construction, build-to-suit leased space, or renovation project that costs more than 50% of the estimated replacement cost must meet the Executive Order's high-performance standard. The high-performance standard is defined as achieving a 10% reduction in energy consumption as compared to the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ANSI/ASHRAE/IES) Standard 90.1.2016. This criterion essentially establishes a 10% efficiency increase over the 2018 International Energy Conservation Code (IECC) building code. Pennsylvania is currently implementing the 2015 (IECC) building code (except for the City of Philadelphia which is implementing the 2018 building code.)

The DGS Public Works Bureau of Pre-Construction and DCNR's Bureau of Facility Design and Construction have authority to construct new facilities for the commonwealth. In addition, the DGS Bureau of Real Estate oversees the management of commonwealth facility leases and

lease renewals. These bureaus each have committed to pursue the Executive Order's high-performance standards, by incorporating the standards into contract provisions.

Commonwealth-owned and -leased high-performance building projects are listed in Table 6. These projects are currently planned or under construction to incorporate (at a minimum) the 10% reduction in energy consumption over ANSI/ASHRAE/IES Standard 90.1.2016. Five new projects were added in this reporting year. DCNR's Hickory Run State Park facility was completed in 2020 and will be seeking U.S. Green Building Council LEED certification in 2021.

**Build any new buildings, major renovations, build to suit leased buildings to high-performance building standards**



*Hickory Run State Park Visitor Center and Office. LEED green building certification anticipated in 2021.*



**Table 6:**



**Commonwealth-Owned High Performance Building Delivery  
Projects in Construction & Planned**

Number	Agency	Project	Location	Project Description	Delivery	Performance Goal
1	Department of Conservation & Natural Resources	Construct New Visitor Center and Office	Hickory Run State Park, Carbon County	Construct new combined visitor center and office for visitor contact, campground check-in, general park administration, visitor interpretive programming and visitor education. Building to include LEED Certification.	Construction Complete 2020	LEED Certification
2	Game Commission	Construct Replacement Regional Office Facility	South-Central Regional Office, Huntingdon County	Demolish existing facility and construct energy-efficient replacement utilizing high performance building envelope and geothermal mechanical systems.	Design 2020 Construct 2021	10% Reduction over ANSI/ASHRAE/IES Standard 90.1.2016
3	Department of Military & Veterans Affairs	Construct New Police Station Facility	Fort Indiantown Gap, Lebanon County	Construct new facility utilizing high performance building envelope and systems. Project includes; central alarm systems, holding cell, arms vault, evidence room, locker rooms, and stand-by generator.	Design 2020 Construct 2021	10% Reduction over ANSI/ASHRAE/IES Standard 90.1.2016
4	Department of Conservation & Natural Resources	Construct New Resource Management Center	Delaware State Forest, Pike County	Construct new office and storage buildings utilizing high performance building envelope and systems. Building to include LEED Certification.	Design 2021 Construct 2023	LEED Certification
5	Department of Conservation & Natural Resources	Construct New Park Office	Hills Creek State Park, Tioga County	Construct new park office for visitor contact, general park administration, visitor interpretive programming and education. Building to include PV solar array and LEED Certification.	Design 2020 Construct 2022	LEED Certification
6	Department of Conservation & Natural Resources	Construct New Park Office	Marsh Creek State Park, Chester County	Construct new park office for visitor contact, general park administration, visitor interpretive programming and education. Building to include PV solar array and LEED Certification.	Design 2020 Construct 2022	LEED Certification
7	State-Related Higher Education School	Renovation of Historic Vail Hall	Lincoln University, Chester County	Renovate Vail Hall and construct new 14,000 sq. ft. replacement addition for office consolidation utilizing high performance building envelope and systems.	Design 2020 Construct 2022	10% Reduction over ANSI/ASHRAE/IES Standard 90.1.2016
8	State System of Higher Education	Renovation of Baron-Forness Library	Edinboro University, Erie County	Renovate Baron-Forness Library including energy-efficient mechanical systems, high performance windows, exterior façade upgrades and security and access controls.	Design 2020 Construct 2022	10% Reduction over ANSI/ASHRAE/IES Standard 90.1.2016
9	Independent Higher Education School	Construct New Community Learning Center	Thaddeus Stevens College of Technology, Lancaster County	Construct new facility including; child care center, STEM laboratory, classrooms, fitness area and computer lab. Building to utilize high performance building envelope and systems.	Design 2021 Construct 2022	10% Reduction over ANSI/ASHRAE/IES Standard 90.1.2016
10	Department of Conservation & Natural Resources	Construct New Park Office	Keystone State Park, Westmoreland County	Construct new park office for visitor contact, general park administration, visitor interpretive programming and education. Building to utilize high performance envelope & systems.	Design 2020 Construct 2022	LEED Certification
11	Department of Conservation & Natural Resources	Construct New Resource Management Center	Gallitzin State Forest, Cambria County	Construct new office and storage buildings utilizing high performance building envelope and systems. Facility to include net-zero PV solar array and LEED Certification.	Design TBD Construct TBD	LEED Certification
12	Department of Military & Veterans Affairs	Readiness Center Rehabilitation	Plymouth Meeting Readiness Center & Horsham Air Guard Station	Renovations to the Readiness Centers at each location and construction of a new Readiness Center Annex at Plymouth meeting including interior finishes, site work and upgrades.	Design 2021 Construct 2022	10% Reduction over ANSI/ASHRAE/IES Standard 90.1.2016
13	Department of Education	Cope Hall Additions and Renovations	Cheyney University Cope Hall	Provide additional square footage and renovations to Cope Hall to accommodate student athletic programs	Design 2021 Construct 2022	10% Reduction over ANSI/ASHRAE/IES Standard 90.1.2016
14	Department of Military & Veterans Affairs	Construct New Youth Challenge Multipurpose Bldg.	Fort Indiantown Gap, Lebanon County	Construct a new facility for the National Guard Youth Challenge program to include a multipurpose gymnasium, cafeteria, classrooms and kitchen space.	Design 2021 Construct 2022	10% Reduction over ANSI/ASHRAE/IES Standard 90.1.2016
15	Department of Military & Veterans Affairs	Pittsburgh Combined Support Maintenance Shop (CSMS)	Coraopolis Air Guard Station Pittsburgh Airport	Construct a new maintenance shop for vehicle and equipment maintenance.	Design 2021, 2022 Construct in 2023	10% Reduction over ANSI/ASHRAE/IES Standard 90.1.2016
16	State System of Higher Education	Sturzebecker Health and Science Center Addition	West Chester University	Renovations to include facility systems and interior finishes for the College of Health Sciences and Athletic Department	Design 2021 Construct 2022/2023	10% Reduction over ANSI/ASHRAE/IES Standard 90.1.2016

**Commonwealth-Leased High Performance Building Delivery**

Number	Agency	Project	Location	Project Description	Delivery	Green Standard
1	Department of Human Services & Office of Administration	Build-to-Suit Office Building	7th Street Harrisburg City, Dauphin County	The new space will be built with energy conservation features including LED lighting, water conservation measures, site design to manage glare and heat gain, and use of recycled materials.	Design 2020 Construct 2021	10% Reduction over ANSI/ASHRAE/IES Standard 90.1.2016

The Department of Human Services and the Office of Administration's 7th Street office building in Harrisburg, will be the first leased facility to incorporate the Executive Order's high-performance building standards. The DGS Bureau of Real Estate, client agencies and Hudson Companies, the building owner, incorporated many high-performance elements into the design. For example, the energy modeling of the building envelope supported decisions for optimization of wall and roof insulation products and the selection of white roofing membrane that will reflect solar radiation away from the building

and reduce heat gains when the building is in cooling mode. Additional details, such as, extended length entry vestibules will limit unconditioned air entering the facility through the front door which will reduce heating and air conditioning costs. In addition, the aluminum windows are comprised of 95% recycled content and the window glazing contain 75% recycled content. The facility is under construction and is expected to be completed and occupied in 2021. Figure 5 shows the 7th Street project under construction in the Fall of 2020.

**Figure 5:**



*Future home of Department of Human Services and Office of Administration, 7th Street Harrisburg.  
Photo Courtesy of Hudson Companies.*

### **GreenGov Recommendations to Agencies**

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- Partner with DGS Public Works to develop methodology for the measurement and verification of the facility performance standards set forth through the Executive Order.
- Use DGS Public Works high-performance construction guidance documents to consider moving beyond the minimum performance standards set forth through the Executive Order.
- Work on strategic planning to capitalize on permanent energy and cost savings available to the commonwealth through new workspace consolidation opportunities created by the global pandemic.

## 6. Agency Certification Checklist

The GreenGov Agency Certification Checklist (Checklist) was developed by GreenGov for the purpose of assessing agencies' progress delivering sustainability within government operations and achieving the *Performance Goals for State Agencies* identified in the Executive Order. Thirty commonwealth agencies completed the Checklist representing their respective agency's sustainability activities looking back on fiscal year 19/20. Agency Checklists are available on the GreenGov [website](#) for public review.

The Checklist is designed to help identify new opportunities for continuous improvement, and therefore is not intended for agencies to achieve a perfect score.

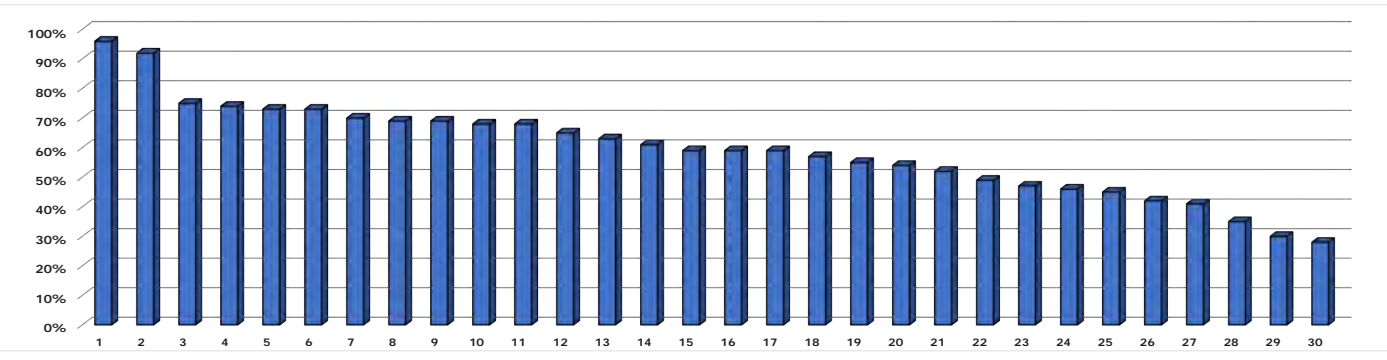
The percentages assigned to each agency are not indicative of "passing" or "failing" grades. In addition, each agency has differing opportunities and operational footprints compared to others. The Checklist is intended to show progress overtime across all agencies, and by each agency from one year to the next. The Checklist intends to steer agencies into recognizing business areas that may need support, enhancements, or consideration of new strategies to implement in future years. Figure 6 shows the overall Checklist score by agency for the fiscal year 2019-20. Agencies were scored based on "Points Applicable" to them.

Figure 6:



GreenGov Checklist Agency Overall Scores - 2020

State Agencies	Department of Banking and Securities	Department of Corrections	Office of General Counsel	Dept. of Conservation of Natural Resources	State Police	Turnpike Commission	Department of Agriculture	Department of Transportation	State Fire Commission	PA Emergency Management Agency	Dept. of Military and Veterans Affairs	Department of State Programs	Department of Drug and Alcohol	Historical and Museum Commission	Department of General Services	Department of Human Services	Dept. of Labor and Industry	Office of Community and Economic Development	Office of Administration	Department of Education	Department of Environmental Protection	Public Utility Commission	Insurance Commission	Department of Aging	Office of State Inspector General	Department of Revenue	Department of Health	Liquor Control Board	Office of the Budget	Game Commission
Points Applicable	98	154	48	152	135	154	151	137	151	146	107	63	154	153	153	145	53	60	52	151	81	62	67	58	83	141	134	43	150	
Points Earned	94	142	36	112	99	113	108	104	94	103	100	70	40	94	91	91	86	30	33	28	78	40	49	31	26	35	58	47	13	42
Score	96%	92%	75%	74%	73%	73%	70%	69%	69%	68%	68%	65%	63%	61%	59%	59%	59%	57%	55%	54%	52%	49%	47%	46%	45%	42%	41%	35%	30%	28%



In addition, Figure 7 shows the GreenGov Agency Checklist categories and the average scores by Checklist category across all thirty agencies. The figure generally shows progress across all categories, except for transportation. Changes in the categories are briefly summarized below.

- The **Benchmarking & Evaluation** checklist category has a 5% increase in performance this year that is mostly attributed to greater participation in energy-saving facilities construction projects including the GESA Program, as well as the commonwealth's Utility Benchmarking Initiative though the EnergyCAP Program.

- The **Building & Structures** checklist category has maintained a similar score to last year's performance though there have been additional measures added to the category. Gains in the category include increased implementation of facility maintenance plans for efficient operations, as well as additional conversions to LED lighting, automated switch installation and other energy-saving measures.
- The **Transportation** checklist category has a 10% decrease in performance compared to last year. This drop in performance is attributed to the expansion of measures in the category and tighter scoring criteria, along with difficulties in delivering

construction projects including charging stations during COVID-19.

- The **Products & Materials** checklist category has a 4% increase in performance this year that is attributed to increased participation and messaging on recycling programs, as well as an increase in the procurement and messaging of environmentally preferred products.
- The **Culture** checklist category has a 13% increase in performance this year and is attributed to expansion of the category as well as high-performing measures such as increases of teleconferencing and remote work assignments, and greater consolidation of energy-consuming office equipment such as printers & copiers.

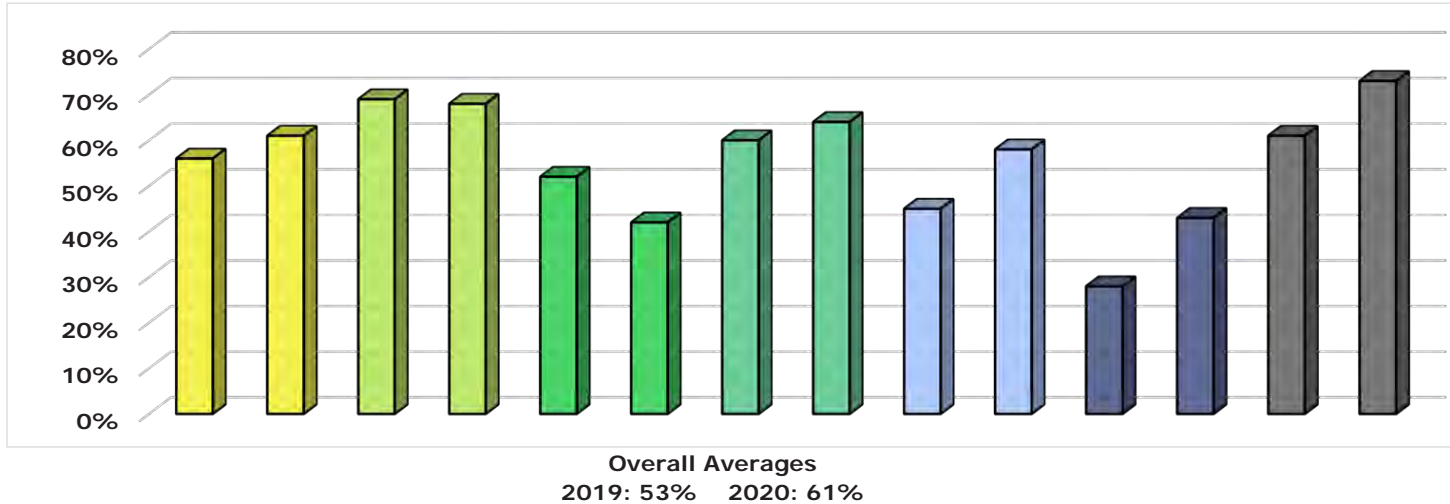
- The **Renewable Energy** checklist category has a 15% increase in performance this year that is attributed to greater messaging and agency awareness of renewable energy procurements, as well as the addition of another commonwealth-sited solar installation.
- The **Resilience** checklist category has a 12% increase in performance this year that is the result of the implementation of work-from-home plans as part of the COVID-19 emergency response, along with the utilization of Continuity of Operations Plans (COOP) to deal with the global virus threat.

Figure 7:



Average Agency Checklist Scores by Category - 2019 vs. 2020

Year	Benchmarking & Evaluation		Buildings & Structures		Transportation		Products & Materials		Culture		Renewable Energy		Resilience	
	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020
Percentage	56%	61%	69%	68%	52%	42%	60%	64%	45%	58%	28%	43%	61%	73%



All commonwealth agencies are responsible for the development of policies and strategies to achieve the Executive Order goals, and to seek to advance their Checklist results overtime. Agencies are tasked with working collaboratively with the GreenGov Council and other agencies to identify and implement new conservation, sustainability, and efficiency strategies to support their business areas. Table 7 is a roll-up of the

lowest scoring measures reported from the GreenGov Agency Checklist. Many of these low-scoring measures are actively being discussed in GreenGov Focus Groups to explore ways to adopt measures or overcome barriers and support agency progress. The GreenGov Recommendations to Agencies (Section 6.a) identify top opportunities available for most agencies to improve in 2021.

Table 7:



**Agency Checklist - 2020  
Lowest Scoring 15 Conservation Measures**

Category	Program Area	Item	Conservation Measure
Benchmarking & Evaluation	Facility Benchmarking	1 H	Worked with a Lessor to establish a utility bill tracking program for at least 1 facility?
	Facility Benchmarking	1F	Established an Executive-level energy portfolio report for your agency's facilities through the EnergyCAP System.
	Facility Benchmarking	1G	Developed a comprehensive utility bill tracking plan or program within Lessor-paid utility leased facilities for energy benchmarking? Example: EnergyStar, EnergyCAP or other (through lessor)
Buildings & Structures	Building Systems Efficiency	6 F	Installed low flow plumbing fixtures within all facilities?
	Building Systems Efficiency	6A	Accepted an investment-grade audit as part of a new Guaranteed Energy Savings Act (GESA) contract with DGS for improving building system efficiency?
Transportation	Vehicle Efficiency	9 C	Installed 50% additional electric vehicle charging stations to support your electrified vehicle fleet plan (or enough to support 25% of your total passenger fleet)?
	Vehicle Efficiency	9 E	Purchased 50% additional battery electric and/or plug-in electric hybrid vehicles (or met 25% of your total passenger fleet)?
	Vehicle Efficiency	9 B	Installed electric vehicle charging stations in at least 1 location to support your electrified vehicle fleet plan?
Products & Materials	Recycling	11 C	Established or participated in a recycling program that incorporates organic and food waste materials?
Culture	Employee Engagement	13 J	Established and supported an employee awards and/or incentives for participation in sustainability?
	Employee Engagement	13 B	Established and supported a Sustainability Communications Plan for the continued messaging of sustainability policies, practices and initiatives throughout your organization?
	Public Engagement	14B	Integrated a new sustainability policy and/or practice within operations with the public and/or outside business partners?
Renewable Energy	On-Site Renewables	16 B	Delivered new large scale renewable energy project(s) at facility(s) equal to or greater than the 3 megawatt net metering threshold (through partnership with DGS or other)?
	On-Site Renewables	16A	Delivered new renewable energy project(s) at facility(s)?
Resilience	Transportation	18 B	Purchased alternative fuel vehicles and/or alternative fuel technology within your fleet that are not included in the Executive Order, such as CNG, LNG, LPG, hydrogen?

**GreenGov Recommendations to Agencies**

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- Establish executive-level reporting on utility bills currently being tracked in the EnergyCAP system. The purpose is to provide agency decision makers key metrics of facilities, in order to prioritize energy efficiency projects to drive down carbon emissions and reduce facility costs.
- Install electric vehicle charging stations in preparation for vehicle electrification. Additionally, work on agencywide electric vehicle fleet planning to support meet the commonwealth’s collective goal of 967 electric vehicles by 2025.
- Support employee engagement opportunities around sustainability. Cultural shifts are difficult for any organization and taking steps to raise awareness and educate on sustainability supports the transition.
- For commonwealth agencies that occupy lease spaces, consider working with a lessor to establish a utility bill tracking program. About half of the commonwealth’s facilities are leased spaces. Engaging lessors on building performance provides opportunities to drive down facility costs and reduce carbon emissions.

## 7. GreenGov Focus Group Highlights

The GreenGov Focus groups are interagency working groups that meet, develop and implement action plans to improve sustainability of commonwealth operations and support the Executive Order goals. The focus groups generally meet on a quarterly schedule throughout the

year. Focus group meetings were well-attended and supported by commonwealth agencies. A summary of each focus group and a brief outline of the primary items identified for the workplans are described in Table 8.

Table 8:



### GreenGov Program - Focus Group Summary

Utility Management (EnergyCAP)	
Focus Group Summary	Group Workplan
The Utility Management group is working to utilize the EnergyCAP system to track & benchmark utilities, develop agency energy portfolios and create standardized utility use reports to identify energy usage and cost savings.	<ul style="list-style-type: none"> <li>• Agency Training with PSFEI (Penn State)</li> <li>• EnergyCAP Agency Workplan</li> <li>• EnergyCAP Agency Reporting Models</li> </ul>
EV's & EV Charging	
Focus Group Summary	Group Workplan
The EV and EV Charging group is assessing agency vehicle fleets and identifying opportunities for electrification. The group has worked to develop plans, specifications & locations for new charging station projects.	<ul style="list-style-type: none"> <li>• EV Charging Project Scoping &amp; Delivery</li> <li>• EV Charging Equipment Selection</li> <li>• DGS Procurement ITQ Development</li> </ul>
Construction & Leasing Specs	
Focus Group Summary	Group Workplan
The Construction & Leasing Specs group is developing, evaluating and including energy-saving specifications, techniques and goals within Commonwealth construction projects and lease agreements through agency & public collaboration.	<ul style="list-style-type: none"> <li>• High-Performance Building Goal Development</li> <li>• Leasing Specification Development</li> <li>• High-Performance Building Delivery Guide</li> </ul>
Products & Materials	
Focus Group Summary	Group Workplan
The Products & Materials group is developing plans for enhanced standardized recycling and environmentally preferred purchasing to be implemented in facilities state-wide including pilot programs and employee education.	<ul style="list-style-type: none"> <li>• Recycling "Kiosks" for Pilot Buildings</li> <li>• Environmentally Preferred Products</li> <li>• Employee Messaging &amp; Education</li> </ul>
Green Facility Management	
Focus Group Summary	Group Workplan
The Green Facility Management group is developing an all-agency facility management manual, messaging strategies for the GESA program and revisions of Management Directive 720.5 for energy conservation.	<ul style="list-style-type: none"> <li>• Facilities Management Manual</li> <li>• GESA Program Best Practices &amp; Messaging</li> <li>• Management Directive 720.5 Revisions</li> </ul>
Small Agency Operations	
Focus Group Summary	Group Workplan
The Small Agency Operations group is working to develop sustainability policies, create employee and public engagement messaging templates and to identify reduction & consolidation business strategies.	<ul style="list-style-type: none"> <li>• Sustainability Policy Development</li> <li>• Employee &amp; Public Messaging Templates</li> <li>• Reduction Strategy Identification</li> </ul>

During 2020, the commonwealth has made specific progress on various tasks which will lead to fulfilling the objectives of each group. The 2020 highlights from each focus group include:

- The **Utility Management Focus Group** continues to improve the quality of utility data management in EnergyCAP, so that analysis and reporting can be conducted to support agency business needs. In addition, many agencies are taking advantage of PSFEI's EnergyCAP training for their staff. The GreenGov Council has surveyed all commonwealth

EnergyCAP users to determine agency needs (and areas for improvements) in order to maximize the use of the EnergyCAP. Those survey results will be discussed with the Utility Management Focus group in early 2021 and, where applicable, incorporated into focus group workplans moving forward.

- The **EV's & EV Charging Focus Group** participated in the development of general specifications needed for consistent application of EV charging projects across the commonwealth. From ongoing focus group discussions, the GreenGov Council discovered

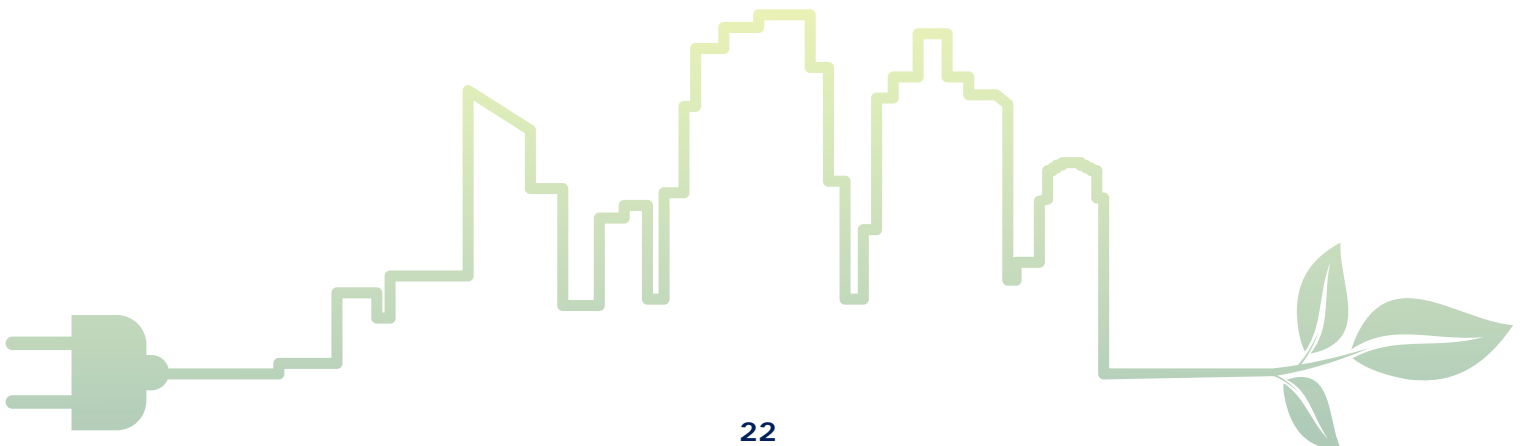
that a new procurement mechanism was needed for certain charging station installation applications. Therefore, GreenGov is working with DGS Bureau of Procurement to develop an Invitation to Qualify (ITQ) for Electric Vehicle Supply Equipment. The objective of the ITQ is to seek support from external vendors to supply electric vehicle charging equipment to commonwealth agencies. COVID-19 and budget uncertainty in 2020, has put a damper on actual charging infrastructure deployment, therefore the primary focus for 2021 will be identifying sites for workplace charging and installing stations.

- The **Construction & Leasing Specs Focus Group** had its initial kick-off meeting in 2020 to introduce the group's role and purpose, and to share the results of a new green lease roadmap project. The high-performance lease roadmap was developed with small contract financial assistance through DEP's Energy Office, and through strategic partnership with DGS Bureau of Real Estate who manages the commonwealth lease portfolio. GDS Associates, Inc provided the engineering and professional services on this project. The road mapping exercise successfully created an agreed-upon pathway, supported by DGS executive management team, for agencies to "pilot" on new leases, amendments, and renewals for office buildings greater than 20,000 square foot (or greater). The lease strategy may impact up to 30 leases over the next two years. This focus group will be assisting with the development and implementation of the lease enhancements in these office spaces.
- The **Products & Materials Focus Group** had several meetings educating each other on Pennsylvania recycling markets, recycling opportunities within state office buildings, and environmentally preferred products availability on state procurement contracts. The group is working on developing a new recycling

kiosk for use in state office buildings, as an effort to encourage more recycling and educate employees and the public on recycling. In addition, the DGS Bureau of Procurement has enhanced its [E-Market Place](#) green product designations, so purchasing agents and local government users can find environmentally preferred products more easily.

- The **Green Facility Management Focus Group** has supported the draft revisions of Management Directive 720.5 on Energy Management and Conservation in Commonwealth-owned and Leased Facilities. The Management Directive was last update in 2008 and needed to be modernized to reflect current business practices. This focus group is also involved with identifying new energy savings opportunities in facilities that fit into our Guaranteed Energy Savings Act program model. The [Energy Savings Performance Contracting through Pennsylvania's Guaranteed Energy Savings Act \(GESA\)](#) booklet was created to support the focus group identifying projects within their respective agencies. There are also preliminary plans to begin development a facility management manual as a model for all commonwealth agencies to use.
- The **Small Agency Operations Focus Group** is exploring ways to support sustainability education and messaging in the commonwealth, including developing employee engagement components.

These focus groups are not open to the public. The GreenGov Council may seek some outside help or support, wherever needed. Any outcomes, results, or needs will be shared in future public stakeholder meetings as a component of public engagement. Interested public should visit the GreenGov [website](#) for more information on upcoming meetings, or request to join our e-mail distribution list by sending a request to [GSGreenGov@pa.gov](mailto:GSGreenGov@pa.gov).



## 8. Conclusion

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The GreenGov Council wishes to thank agencies for their efforts and continued participation toward meeting our performance goals. Agency participation through the GreenGov Agency Checklist and our focus group endeavors are making a difference toward improving sustainability in the commonwealth's business practices. We hope that this report provides a fair assessment and reflection of our commonwealth agencies' collective progress in 2020 and are looking forward to continued collaboration in 2021.

Additionally, GreenGov thanks our external partners and stakeholders for fresh ideas and support for the goals. It takes a network of dedicated people to enhance sustainability and reduce greenhouse gas emissions statewide.



*Pennsylvania Capitol Complex looking North. Site of three ongoing GESA projects to reduce energy consumption.*





# pennsylvania

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