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## 6 Climate Risk Management Plan [L.30.2.5; G.12]

Verizon supports the environmental sustainability policies of Executive Order 13,693, *Planning for Federal Sustainability in the Next Decade*. The Executive Order, in conjunction with the *Implementing Instructions* published June 10, 2015, establishes sustainability goals to reduce the federal government's carbon footprint. Focus areas include energy efficiency, water efficiency, fleet management, green buildings, acquisition and procurement, and waste and pollution prevention. For the last decade, Verizon has been focusing on many of these same areas as it seeks to reduce its own carbon footprint. Every year, Verizon sets short- and long- terms sustainability goals, and reports on its progress against these goals in its annual *Corporate Social Responsibility Report*. To emphasize the centrality of these efforts to Verizon's corporate goals, the Responsibility Report is included as a supplement to the company's annual report.

Verizon Short- and Long-Term Climate Change Goals	
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
[Redacted]	[Redacted]
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[Redacted]	[Redacted]
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[Redacted]	[Redacted]

Verizon proposes to use its annual Responsibility Report as the basis of the annual *Climate Risk Management Plan* submitted to the General Services Administration (GSA). The ultimate goal of both the Executive Order and Verizon's sustainability efforts is to reduce greenhouse gases and create a culture of environmental stewardship that encourages management, employees, suppliers, and customers to use natural resources wisely.

Verizon's Sustainability Team is responsible for Verizon's sustainability efforts, and is the group that will manage Verizon's *Climate Risk Management Plan*. This team has the experience and corporate support to meet the Enterprise Infrastructure Solutions (EIS) contract's goals. In 2009, Verizon appointed its first Chief Sustainability Officer and formed a sustainability team to develop a comprehensive plan to increase Verizon's energy efficiency, reduce our environmental impact, engage our stakeholders, and develop a methodology to measure and report our sustainability performance.

Verizon's sustainability initiatives and practices permeate Verizon's culture and are part of employees' daily work environment; some of these include:

- Verizon's fleet of hybrid vehicles
- Recycling programs throughout Verizon facilities
- Energy-efficient soda machines in break rooms
- Equipment energy-saving devices
- Green buildings
- Verizon-sponsored employee carpooling programs
- Energy efficient document reproduction
- Electronic waste management days for employees
- Employee telecommuting policies

Verizon's commitment to its green initiatives is such that we have incorporated environmental policies into both Verizon's *Employee Code of Conduct* and *Supplier Code of Conduct*.

In the spirit of using resources wisely, Verizon's approach to creating and submitting the *Climate Risk Management Plan* will be to recycle and leverage corporate resources currently devoted to these

efforts. Global objectives to reduce carbon footprints and use resources wisely are valuable, but the actions taken by individuals, corporations, and Government agencies to achieve these goals are local. For example, Verizon has little direct impact on forestry policy or the sustainable use of marine resources. However, we do have direct control

**Green Initiatives Paying Off**

Over the past two years, Verizon has invested \$137 million in green energy, including solar and fuel cell power to run our networks and data centers. This is equivalent to 2,700 homes' worth of electricity for a year, thereby eliminating 20,000 metric tons of CO<sub>2</sub> from the atmosphere.

when it comes to improving the energy efficiency of our network and real estate holdings, as well as how our fleet management team sets and achieves green fleet goals. Our annual *Climate Risk Management Plan* will therefore focus on the corporate goals that Verizon sets, and our achievements towards those goals. The Plan is a living document. Verizon's current priorities are reducing energy usage and implementing clean fleet technologies. As progress is made against these goals, we will find new priorities, such as finding sustainable energy sources.

### **6.1 Climate Change Adaptation [G.12.1]**

Verizon strongly supports GSA's statement that "public disclosures of environmental impacts and sustainable management practices have been associated with reduced supply chain and other business risks for disclosing companies." Publishing goals and then providing transparent and public reporting of progress against those goals is an incredibly powerful tool to encourage positive behavior. Verizon is very public about its sustainability goals. We maintain and constantly update a website devoted to this topic at: <http://www.verizon.com/about/responsibility/sustainability>

Verizon produces an annual report on our progress against our goals. The 2015 report can be found at:

[http://www.verizon.com/about/sites/default/files/2014\\_Verizon\\_Corporate\\_Social\\_Responsibility\\_Report.pdf](http://www.verizon.com/about/sites/default/files/2014_Verizon_Corporate_Social_Responsibility_Report.pdf).

Verizon further agrees with GSA that educating customers on sustainability practices will help EIS customers design projects and Task Order (TO) requirements that support sustainable procurement. Verizon supports pushing sustainability goals down to the TO level. EIS should provide high-level sustainability guidance for proposed solutions, and agencies can then make informed purchasing decisions in support of sustainability goals. For example:

- **Access Technologies.** An agency may choose to implement wireless access technology as an alternative to new construction or as a replacement for older, less energy efficient access types. LTE technology is a clear alternative to trenching new

fiber. An EIS customer may also determine that LTE can be used to replace an existing infrastructure that requires more energy to maintain.

- **LAN Technologies.** Agencies may consider replacing copper-based building and/or campus LANs with fiber. Optical LAN solutions can reduce power consumption by up to 65 percent, space requirements by up to 90 percent, and capital costs related to network elements by up to 74 percent.
- **Equipment.** Newer technology has been generally designed to be more energy-efficient. On EIS, agencies could take advantage of the most efficient equipment and technology currently available. EIS customers should consider whether an alternative configuration can perform the same function more efficiently.
- **Data Center Utilization.** Agencies should determine the most efficient technologies for Data Center deployment. With Cloud solutions, EIS customers can leverage the efficiency of shared resources rather than dedicated infrastructure.

These and other relevant sustainability considerations will be documented in Verizon's response to EIS TOs.

### 6.1.1 SERVICE DESIGN AND OPERATIONS CONSIDERATIONS

Hurricanes Katrina and Sandy provided powerful demonstrations of just how vulnerable network services are to wind and flooding. Clearly such events, if they become more common, as some climate experts predict, must be taken into account when planning and building network infrastructure. Verizon has been doing this. After Sandy flooded downtown New York City, Verizon took advantage during the clean-up to relocate critical infrastructure to higher ground. Verizon also replaced damaged or destroyed network elements with technologies that are less susceptible to water damage (e.g., fiber can withstand flooding far better than copper). To the extent other network infrastructure is exposed to the elements, contingency planning and the rapid deployment of transportable equipment enables Verizon to quickly restore service while more permanent repairs are being made.

Verizon's Business Continuity & Emergency Management (BC&EM) organization is responsible for Verizon's risk management planning. They work closely with network and plant engineers to verify that our network is redundant, protected, and designed to

survive natural disasters. This group also develops the contingency plans that enable the company to quickly respond to disasters so that customers experience as little disruption as possible to vital telecommunication services.

### **6.1.2 CLIMATE CHANGE ADAPTATION STRATEGIES**

As noted in the previous section, Verizon's BC&EM organization is responsible for Verizon's risk management planning. This organization incorporates climate change adaptation strategies into Verizon's risk management programs, with a goal to reduce property, infrastructure, and supply chain vulnerabilities, helping to ensure continuity of service to Verizon customers. This is a dynamic activity, and this organization modifies its planning to respond to the evolving risks created by climate change.

In the aftermath of Katrina, Sandy, and other recent storms that demonstrated the vulnerability of coastal infrastructure, Verizon's BC&EM team began a review of existing facilities to determine what measures could be taken to increase the survivability of these sites. For example, the team considered whether gear located on a ground floor could be moved to a higher floor, whether towers could be adequately reinforced to withstand higher wind speeds, and whether existing back-up generators and fuel reserves would be capable of mitigating the effects of future natural catastrophes. Verizon's BC&EM team closely coordinates with the network engineers to take into account the lessons learned from these major storms as Verizon designs its network infrastructure.

#### **6.1.2.1 Executive Order (EO) Compliance**

[REDACTED]. As noted, the Verizon BC&EM team is already doing this. The team is not only reactive, executing disaster-recovery plans after a major storm like Sandy, but also is proactive, identifying Verizon's mission critical facilities, products, and services, and developing and implementing contingency and emergency response plans. To this end, the Verizon team evaluates business operations and supply chains that may be vulnerable to climate change and plans accordingly. Verizon complies with and supports the climate change adaptation goals described in E.O. 13,693.

[REDACTED]

GSA can access this reporting at any time at the following URL:

<http://www.verizon.com/about/responsibility/sustainability/emissions-profile>.

**Climate Change Adaptation, Sustainability, and Green Initiatives Report.** Verizon delivers a yearly Climate Change Adaptation, Sustainability, and Green Initiatives Report to the GSA contracting officer (CO) that highlights any changes made throughout the year to remain fully compliant with the Federal directives mentioned above. RFP Section F contains the schedule for all contractual deliverables.

**GSA CO Notification Regarding Compliance.** Verizon will notify the end user agency and the GSA CO immediately if conditions arise thought to be out of compliance with the aforementioned E.O.s, laws, regulations, and directives.

## 6.2 Sustainability and Green Initiatives [G.12.2]

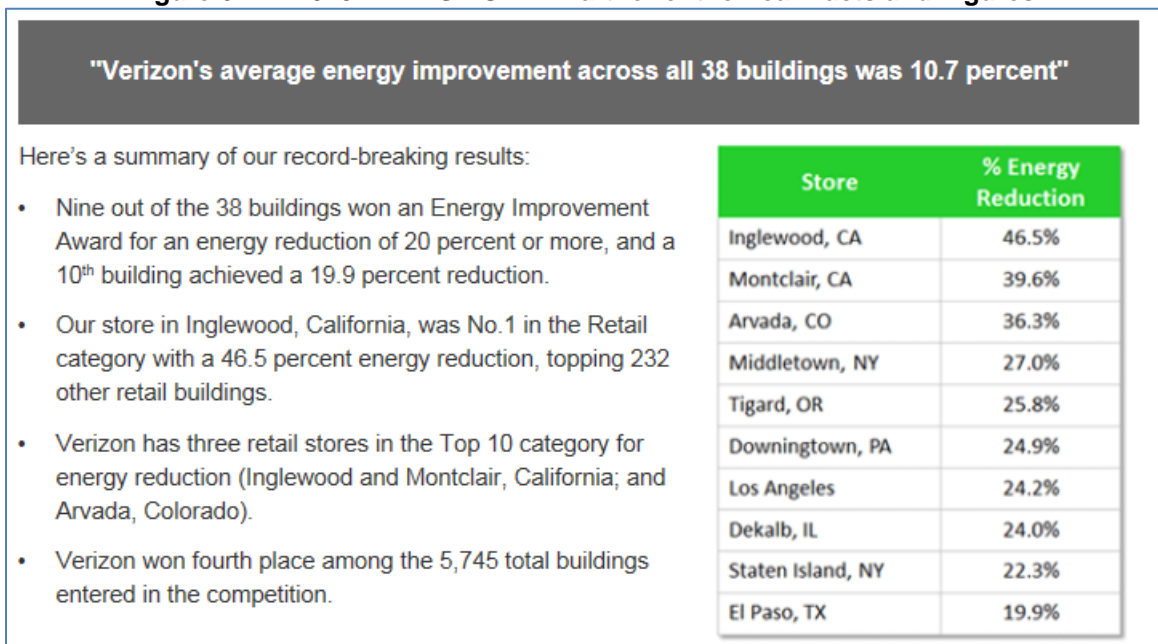
- **Commitment to Sustainability.** Like GSA, Verizon is committed to environmentally-friendly, sustainable practices that reduce the Government's environmental footprint. Verizon will provide sustainable products and services whenever possible.
- **Consideration of E.O. 13,693.** Both the sustainable acquisition and Data Center requirements of E.O. 13,693 will be considered in the design and operations of services to be provided under the EIS contract.
- **Compliance with Climate Change Adaptation Conditions.** Verizon will comply with the climate change adaptation conditions described in E.O.s and other applicable laws, regulations, and directives.
- **GSA CO Notification Regarding Compliance.** Verizon will notify the agency and the GSA CO immediately if conditions arise thought to be out of compliance with E.O.s, laws, regulations, and directives.
- **ENERGY STAR or Electronic Product Environmental Assessment Tool (EPEAT®) Compliance.** Verizon supports efforts to use energy efficient equipment whenever possible. Verizon generally does not manufacture equipment, but we do purchase such equipment and, whenever possible, Verizon purchases equipment



certified by programs such as ENERGY STAR and EPEAT. We use this equipment in our networks, and we deploy this equipment to customer locations. Every effort will be made to use ENERGY STAR / EPEAT bronze-registered equipment when responding to EIS TOs. Verizon’s expectation is that agencies will procure equipment through the contract that meets these requirements. In the event that Verizon becomes aware that an agency desires to purchase equipment that does not meet these requirements, Verizon will note this fact in the TO response.

Verizon has a long and successful history with the ENERGY STAR program. In 2015 the Environmental Protection Agency (EPA) recognized Verizon’s continued leadership in protecting the environment by presenting us with our third consecutive ENERGY STAR Partner of the Year-Sustained Excellence Award for superior energy-efficiency achievements. The chart below shows the results that earned this award.

**Figure 6.2-1. 2015 ENERGY STAR Partner of the Year Facts and Figures.**



- **E.O. 13693.** Verizon will comply with E.O. 13,693, which requires agencies to improve data center energy efficiency at Government facilities.



### **6.2.1 ELECTRONIC PRODUCT ENVIRONMENTAL ASSESSMENT TOOL [G.12.2.1]**

Under this contract, Verizon will deliver, furnish for Government use, or furnish for contractor use at a federally-controlled facility, equipment that was EPEAT bronze-registered at the bronze level or higher throughout the life of the contract.

Verizon will deliver a yearly Climate Change Adaptation, Sustainability, and Green Initiatives Report to the GSA CO that highlights any changes made throughout the year to remain fully compliant with the directives mentioned above. Verizon will comply with RFP Section F requirements for submitting its Climate Change Adaptation, Sustainability, and Green Initiatives Report by the contract award date.

### **6.2.2 ENERGY EFFICIENT PRODUCTS [G.12.2.2]**

Verizon will confirm that energy-consuming products are energy efficient (e.g., ENERGY STAR products or Federal Energy Management Program (FEMP) - designated or low standby power products) throughout the life of the contract, in compliance with FAR Clause 52.223-15 Energy Efficiency in Energy-Consuming Products.

### **6.2.3 DATA CENTERS AND CLOUD SERVICES [G.12.2.3]**

Verizon will use Government-certified and compliant data centers as required under this contract. Keeping servers cool requires significant energy for any data center. Verizon deploys a number of energy conservation strategies in our data centers, including:

- Using a quiet containment design that minimizes the amount of energy used by the computing equipment.
- Using a Vigilant Energy Management Systems (VEMS) to monitor and control the cooling units required to regulate data center temperature. By using VEMS and replacing parts regularly, Verizon maximizes

#### **Solar & Fuel Cell Energy Investment**

***Verizon has installed 22MW+ of solar and fuel cell energy.***

In 2014, Verizon saved 13.2 million kilowatt hours at seven domestic and one international data center sites. We are now looking for other ways to make data centers more efficient. At one location, Verizon installed a chemical-free water treatment system that will help reduce water consumption by as much as 28%, for a projected savings of 5.1 million gallons of water per year.



energy efficiency.

- Installing solar panels, improving air circulation and installing lighting controls and LED lighting.

Verizon will report annually the power usage effectiveness (PUE) of Verizon-owned data centers used under this contract.