



## Should the Government Expand Telework?

By Kenneth P. Green

*“Telework” or “telecommuting” offers significant economic, environmental, and security benefits: employees who telework reduce or eliminate commute times—saving time and money and reducing pollution—and employers reduce office space and operating costs. Telework also protects organizations from disruptions that follow natural disasters or terrorist attacks. Despite these benefits, telework faces a variety of barriers, from a reluctant institutional culture to unfavorable tax laws. The government should take simple steps to lower or eliminate these barriers, saving taxpayers’ money and paving the way for a more nimble workforce.*

Many different groups are looking for ways to reduce America’s use of energy, for many different reasons. Some are concerned about climate change and view reducing energy use as fundamental to curbing greenhouse-gas emissions. Others are concerned about reducing conventional air pollutants. Some view reducing energy use, particularly oil use, as a national security imperative. Still others are concerned about protecting the environment from the damages caused by energy production and distribution. The Obama administration and the Democratically controlled Congress have expressed particular interest in reducing oil consumption, air pollution, and greenhouse-gas emissions, and have explored innumerable approaches to driving such changes in the private sector. As it turns out, they have a great option for achieving these goals already under their control: the disposition of their own workforce. In this *Outlook*, I examine an untapped resource for energy reduction by state and federal governments: the expansion of full-time telework for government workers.

Telework basically means decentralized working. According to an article published by the U.S. General Services Administration in 2000, telework (also “telecommuting” or “flexiplace”) is

Kenneth P. Green (kgreen@aei.org) is a resident scholar at AEI.

a work arrangement “in which an employee regularly works at an alternate worksite such as the employee’s home, a telecommuting center (telecenter), or other alternate worksite.” The terms “telework” and “telecommuting” were coined in 1973 by a rocket scientist named Jack Nilles,

### Key points in this *Outlook*:

- Government leaders seek to reduce oil consumption and pollution emissions and to increase national security. One way they can do this is through expanding telework.
- Teleworkers and their employers significantly reduce energy use and save money. Over the course of a year, the average American could save about 340 gallons of gas, more than one thousand dollars in commuting costs, and more than three tons of carbon-dioxide emissions by teleworking.
- Telework builds resilience in the face of disaster, dispersing workers and data so business can continue and rapidly recover from natural disasters or attacks like those of September 11.
- The government can achieve these benefits and reduce spending by setting clear goals for increasing telework and reforming tax laws that discourage work from home.

who had teleworked as a consultant for the United States Air Force Program from Los Angeles in the 1960s. Nilles became a proponent of telework but could not generate much government interest. Instead, he crusaded for telework in the California government, which was much more open to the idea.<sup>1</sup>

Parts of the federal government have taken up the issue of telework before. The current mandate for telework in the executive branch of the federal government, which requires each agency to establish a policy under which eligible employees may participate in telework, dates back to October 2000.<sup>2</sup> Many government agencies and programs have also promoted telework over the last twenty years.

Though estimates vary broadly according to the survey methods used and entities examined, there clearly is plenty of room for expansion in government telework. In the United States, the public sector employs about 15 percent of the population; in 2008, there were over 21 million public-sector employees.<sup>3</sup> According to a 2009 report on teleworking that surveyed seventy-eight federal agencies, about 60 percent of employees were considered eligible to work from home, but only 5.24 percent were teleworkers.<sup>4</sup> According to a different survey by Telework Exchange (a public-private partnership that studies telework) of 664 public-sector personnel at more than sixty-five agencies, 96 percent of government employees are eligible to work from home, but 42 percent are unaware of their own eligibility.<sup>5</sup>

Two new bills seeking to expand government telework have rekindled an interest in the subject. S 707, the Telework Enhancement Act, sponsored by Senator Daniel Akaka (D-Hawaii), passed the Senate on May 24, 2010.<sup>6</sup> The bill requires the head of each executive agency to establish a telework policy, determine employee eligibility, and notify all employees of their eligibility within 180 days of enactment.<sup>7</sup> The bill also requires that employees enter a written agreement to telework.

The second bill, HR 1722, sponsored by Representative John Sarbanes (D-Md.) and called the Telework Improvement Act of 2010, passed the House on July 14, 2010. Both bills are somewhat limited in scope and give great discretion to agency heads. HR 1722 is slightly more robust, specifically directing agency heads to authorize workers to telecommute to “the maximum extent possible without diminishing agency operations and performance.”<sup>8</sup>

In light of the new legislation and interest in telework, I will survey the literature to determine the

## THE BENEFITS OF TELEWORK

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Per year, the average teleworker

- Uses 339 fewer gallons of gas
- Saves \$1,018 in commuting costs
- Emits 6584 fewer pounds of CO<sub>2</sub>

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SOURCES: Bureau of Transportation Statistics, U.S. Department of Education, *From Home to Work, the Average Commute Is 26.4 Minutes* (Washington, DC, October 2003), available at [www.bts.gov/publications/omnistats/volume\\_03\\_issue\\_04/pdf/entire.pdf](http://www.bts.gov/publications/omnistats/volume_03_issue_04/pdf/entire.pdf) (accessed August 26, 2010); U.S. Energy Information Administration, “Weekly U.S. All Grades All Formulations Retail Gasoline Prices,” available at [http://tonto.eia.doe.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&rs=mg\\_tt\\_us&f=w](http://tonto.eia.doe.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&rs=mg_tt_us&f=w) (accessed August 26, 2010); U.S. Environmental Protection Agency, *Emission Facts: Average Carbon Dioxide Emissions Resulting from Gasoline and Diesel Fuel* (Washington, DC, February 2005), available at [www.epa.gov/oms/climate/420f05001.pdf](http://www.epa.gov/oms/climate/420f05001.pdf) (accessed August 26, 2010); and U.S. Department of Transportation, Federal Highway Administration, *Highway Statistics 2001* (Washington, DC, 2001), available at [www.fhwa.dot.gov/ohim/hs01/index.htm](http://www.fhwa.dot.gov/ohim/hs01/index.htm) (accessed August 26, 2010).

NOTE: The average round-trip commute is thirty miles; the 2008 average price of gas was three dollars per gallon; 19.4 pounds of carbon dioxide are emitted per gallon of gas; the average passenger car drives 22.1 miles per gallon; and 250 work days per year are assumed.

potential benefits and liabilities of federal and state governments significantly expanding telework. As I will show, there are significant economic, environmental, and security benefits to increasing telework.

### Economic Benefits

Telework offers many potential economic benefits for workers and employers. Telework Exchange calculates the average annual cost of commuting as \$9,796 for five-day weeks, but only \$3,918 for three-day teleworking, a savings to workers of \$5,878.<sup>9</sup> Those savings add up: if the 79 percent of federal workers who could telework full time did so, they would save a cumulative \$13.9 billion in commuting costs annually.<sup>10</sup>

Private-sector examples illustrate these economic benefits. A report by the consulting group TIAX LLC commissioned by the Consumer Electronics Association found that 3.9 million teleworkers saved 840 million gallons of fuel annually. Assuming fuel costs \$3 per gallon on average, that is equivalent to \$2.25 billion.<sup>11</sup> In addition, Sun Microsystems estimates that its typical teleworker saves \$2,000 in fuel costs per year.<sup>12</sup>

Employers also stand to benefit. For example, with 40 percent of its employees teleworking, IBM has reduced office space by 78 million square feet and gained \$2.9 billion since 1995. IBM also saved on

power bills: between 1990 and 2005, the company reduced its energy use by 17.2 billion kWh of electricity, saving \$22.9 million.<sup>13</sup> Sun Microsystems is saving \$70 million annually in real estate costs from its Open Work telework program.

The government has not been completely idle regarding telework. Between 1995 and 1998, the Federal Railroad Administration closed eighteen field offices and reduced office space in nine others by implementing telework, saving the public \$251,929.<sup>14</sup> The General Services Administration's four telecenters save employees \$500 per year for just one or two days of telework per week.<sup>15</sup> At the U.S. Patent and Trademark Office, 85 percent of eligible patent attorneys telework, which allowed the agency to consolidate office space from eighteen offices down to six while simultaneously increasing the number of employees.<sup>16</sup> Finally, at the National Science Foundation, 54 percent of employees have telework agreements on file, resulting in a total yearly savings of over \$700,000 in commuting costs.<sup>17</sup>

## Environmental and Energy Benefits

There are also robust studies suggesting that telework has significant environmental benefits, in line with President Barack Obama's stated goal to reduce the impact of the government on the environment and the climate. The average one-way commute in the United States is about fifteen miles and takes about twenty-five minutes.<sup>18</sup> Telework Exchange calculates that three-day teleworking would reduce average annual pollutants by 6,040 pounds per person per year, rising to 15,100 pounds for five-day telework weeks.<sup>19</sup> That would significantly reduce pollution if the number of federal teleworkers increased closer to the maximum potential. Telework Exchange also calculates that if the 79 percent of federal workers who could telework full time did so, they would reduce pollutants by 21.5 billion pounds, eliminating as much CO<sub>2</sub> as taking 2 million cars off the road.<sup>20</sup> TIAX LLC calculates that the estimated 3.9 million teleworkers in the United States save from 10 to 14 million megatons of CO<sub>2</sub> annually.<sup>21</sup>

Private-sector examples illustrate these benefits. Sun Microsystems estimates that its typical teleworker saves more than two tons of CO<sub>2</sub> annually.<sup>22</sup> According to a 2000 AT&T survey, teleworking reduced yearly emissions by 48,450 tons of carbon dioxide, 606 tons of carbon monoxide, 242 tons of nitrogen oxides, and 121 tons of volatile organic compounds.<sup>23</sup>

In addition to cutting pollution, telework also reduces energy use. Annually, a worker with a one-way commute of twenty-two miles could save 81,000 Mega-joules of energy by teleworking five days a week—which is equivalent to 50 percent of the annual energy consumption of an average household.<sup>24</sup> According to TIAX LLC, 3.9 million teleworkers currently save between 130,000 and 190,000 Terajoules of energy annually.<sup>25</sup> That is roughly equivalent to 23 to 33 million barrels of oil, which is more than the United States consumes in a day.<sup>26</sup> TIAX LLC further estimates that teleworking saves 9 to 14 billion kWh of electricity each year, which is the amount of energy used by 1 million households annually.<sup>27</sup> A 2010 study by the Telework Research Network reports overall electricity savings of 4,400 kWh per person per year.<sup>28</sup>

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Increased telework could result in significant economic, environmental, security, and other benefits that are high priorities for the Obama administration as well as for both parties in Congress.

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## Security Benefits

Increasing telework can also contribute to organizations' security. Brad Allenby and Jonathan Fink, writing in *Science*, observe that dispersing assets makes companies less vulnerable to targeted attacks, disasters like tornadoes, and diseases spreading among employees. In addition, they explain:

A dispersed workforce enhances resiliency in more subtle ways. . . . The response to the September 11 attacks indicates that postevent stress and anxiety (which is a major purpose of many terrorist attacks) can be relieved substantially if arrangements are in place that enable dispersion of the workforce, especially to a home environment where they are both more comfortable and feel themselves less of a potential target.<sup>29</sup>

The Congressional Research Service reports that telework allowed government employees to continue

work after anthrax was discovered in the mail delivered to occupants of the Hart Senate Office Building on October 17, 2001.<sup>30</sup>

In addition, Telework Exchange suggests that robust telework arrangements are an essential part of Continuity of Operations (COOP) programs—plans to keep government operations on track following a terrorist attack or natural disaster.<sup>31</sup> According to a Telework Exchange survey, 40 percent of respondents think their agency is prepared to continue work in a disaster, but of the respondents whose agencies have telework options, 90 percent said their agency could work in a disaster.<sup>32</sup> In this area, the government has responded broadly: 56.4 percent of agencies had teleworking in their COOP in 2009.<sup>33</sup> In 2008, the House of Representatives passed HR 4106, which would have required federal agencies to include telework in their COOP programs, but the bill died in Congress.

## Additional Benefits

In addition to energy savings, environmental benefits, and security benefits, telework has a broad array of additional, sometimes-unquantifiable benefits. Studies suggest that for workers, nonquantitative benefits include workday flexibility, reduced stress (for example, from travel), and greater geographic flexibility.<sup>34</sup> Telework programs have been shown to aid with employee recruitment and retention and, as mentioned above, lead to reduced real estate and building-operating costs.<sup>35</sup>

For example, a 2001 study by the U.S. Office of Personnel Management found that teleworkers were at least as productive, saved time, and had reduced levels of stress compared to other workers.<sup>36</sup> The General Services Administration's four telecenters save employees 160 hours per year and six thousand miles of commute for one or two days of telework per week.<sup>37</sup> As for quality of life, a study by AT&T found that 81 percent of their teleworkers report a better balance between work and family, and the Congressional Research Service found that telework leads to improved morale and family structure.<sup>38</sup> The Telework Research Network also observes that teleworkers are healthier—suggesting they might save on medical costs—because they are less exposed to sick coworkers, occupational and environmental hazards, and the daily commute, “the most dangerous part of a worker’s day.”<sup>39</sup>

Furthermore, the Telework Research Network found a 25 percent reduction in workforce attrition from teleworkers, along with a 27 percent increase in productivity on telework days.<sup>40</sup> The Telework Research Network also found that telework reduces absenteeism significantly because teleworkers often choose to work during an illness, return to work earlier after pregnancy or surgery, and do not take full days off for personal appointments.<sup>41</sup>

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## Barriers to Expanded Telework

Telecommuting faces a variety of barriers. Agency heads may have incentives to minimize telework. In Washington, as in state government, prestige is often related to the number of people one supervises and the size of the building one occupies. This favors increasing head count and keeping employees together to justify moving into ever-larger, more prestigious buildings. A study by the U.S. Office of Personnel Management evaluated its own telework-program implementation and found that “most of the managers in our study mentioned that they had approached the experience with some reservation. Their concerns focused on the employee’s availability for face-to-face interaction, the potential resentment of the rest of the staff, and anticipated communication problems.”<sup>42</sup>

As the Department of Transportation observes, zoning laws and restrictions on home-based work can also be an impediment to teleworking, as can liability concerns, health and safety issues, and opposition by unions, which view telework as a path to worker oppression rather than liberation.<sup>43</sup> In addition, tax laws are a complicating factor for teleworkers.<sup>44</sup> This is particularly true for apartment dwellers, who may not have the ability to fully wall off their home office from the rest of their apartment, or who may only telecommute for part of the week. The process of claiming a home-office tax exemption is byzantine, to say the least, and requires itemization of taxes, which the majority of taxpayers do not do.<sup>45</sup> Technology can also be a challenge, as not everyone has access to professional-quality computers at home or high-speed Internet connections. But advances

in technology, such as ever-expanding high-speed access, smart phones, and low-cost, high-quality video teleconferencing, could help meet such challenges.

But probably no barrier to telework is as prohibitive as the state income taxes imposed on out-of-state residents who work for companies in the state, which leads to double taxation. As Hollis L. Hyans and Amy F. Nogid explain in *State Tax Notes*:

Individuals are generally subject to tax on all of their income by their state of residence, regardless of where that income is earned. Also, most states that impose a personal income tax also provide that a single visit to the state by a nonresident is sufficient to subject that employee to tax by the nonresident state. Although most states provide a credit for personal income taxes paid to another state, that credit mechanism has been found not to be required under the U.S. Constitution.<sup>46</sup>

The most egregious example of this sort of nonresident taxation can be found in the New York State tax law. Section 601(e) imposes personal income tax on nonresidents who derive income from New York whether they live there or not.<sup>47</sup> The New York law uses a “convenience of the employer” test: that is, a working day (a day where an employee performs work tasks for a New York employer) will always be considered a New York work day, even if duties are performed out of the state, and the income will be taxed in New York.<sup>48</sup>

The issue was tested in court in the case of *Huckaby v. New York State Division of Tax Appeals*.<sup>49</sup> As Eric Rothenburg explains in *CPA Journal*:

In the course of his work for an employer in Queens, Huckaby earned 75 percent of his income in Tennessee and 25 percent in New York. He prorated the numbers accordingly and paid the appropriate tax to Tennessee and New York (Tennessee, however, taxes only unearned income such as interest and dividends, not wages). But the New York court did not agree with this. Because the telecommuting was for Huckaby’s convenience, not the employer’s, and the work Huckaby performed could have been performed in New York, the court ruled that 100 percent of Huckaby’s income was taxable in New York. The court stated: “While the convenience test might be

considered unfair and unsound as a matter of tax policy and a discouragement to telecommuting, it would not upset the Legislature’s and the Commissioner’s considered judgment so long as the convenience test has been constitutionally applied.”<sup>50</sup>

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Delaware, Nebraska, and Pennsylvania have less aggressive versions of the “convenience of the employer” test.<sup>51</sup> Attempts to remove this barrier have been unsuccessful: HR 2600, the Telecommuter Tax Fairness Act of 2009, would eliminate double taxation on telecommuters, but the bill has not made it out of committee.<sup>52</sup>

## **Conclusion**

Increased telework by federal and state governments could result in significant economic, environmental, security, and other benefits that are high priorities for the Obama administration as well as for both parties in Congress. The federal government has taken steps to increase telework in recent years but could clearly do far more. Legislation aimed at increasing telework at federal and state levels should set hard, percentage-based targets to be achieved by fixed dates to maximize telework as quickly as possible. The extent to which any agency can allow its workers to telework should be determined by an objective entity unconnected with that agency, rather than leaving discretion with agency administrators who may face internal opposition and perverse incentives to keep large, in-office workforces. Congress should work to eliminate double taxation on telecommuters, simplify the byzantine home-office tax-deduction laws, and make this deduction available to nonitemizers.

If the government implements these recommendations, it may become a model for the private sector and achieve even greater benefits. The Telework Research Network estimates that at the national level, moving everyone to half-time, home-based work would save \$23 billion annually in imported oil, cut Persian Gulf

imports by 37 percent, achieve 27 percent of the nation's 2020 goal for greenhouse-gas reductions, prevent almost one hundred thousand traffic injuries and deaths, save over \$11 billion in accident costs, and lower highway maintenance costs by almost \$2 billion annually.<sup>53</sup> With government agencies at both state and federal levels strapped for revenue, expanding telework would seem timely, to say the least. Increasing telework could reap numerous environmental and health benefits and reduce the cost of government, which most people would consider a very good thing.

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## Notes

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