

Section I: Agency Policy and Strategy

I. Agency Policy Statement

The National Science Foundation (NSF) is committed to complying with all environmental and energy statutes, regulations and Executive Orders (EO) . NSF strives to serve as a model environmentally responsible and sustainable Federal agency. We assume an active leadership role among the small government agencies by coordinating the dissemination of environmental and sustainability information and regulatory guidance through the Small Agency Council.

As part of our commitment to both the spirit and letter of complying with the requisite regulations and the intent of promoting government-wide sustainability efforts, NSF also aggressively promotes cultural change and the institutionalization of such change through the efforts of all of our employees involved in the Got Green program. The mission of the Got Green committee is to “Take simple yet comprehensive action to further the NSF culture of environmental responsibility based upon the fundamental belief that the NSF workforce believes in protecting our world through environmental stewardship.”

The NSF Senior Sustainability Official (SSO) regularly briefs and elicits participation and support from NSF senior management, including the budget, legal and IT, and acquisition offices for the Foundation’s environmental and sustainability programs and special projects.

NSF has a traditional commercial lease managed by the General Services Administration, which will be expiring in 2013. Our immediate goals are now focused on small, incremental efficiencies, such as installing water saving faucets, and continued improvements in re-using property and recycling within the Foundation. Our long term top priority is to ensure that the new leased space is Gold certified so as to enable NSF to meet mandated GHG reductions and achieve long term sustainable energy efficiencies.

II. Sustainability and the Agency Mission

The Foundation's mission is to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense. NSF does this by investing in the best ideas from the most capable people, determined by competitive merit review of grant proposals. Key to this mission, are the many actions and people required to manage the subject program areas, to solicit, review, process, and award and administer grants.

Achieving sustainability targets and goals will support the Foundation in carrying out its mission by making it possible to manage grant programs more efficiently and cost-effectively through better use of Foundation resources, including energy, supplies, and personnel. NSF faces significant institutional and technological challenges in achieving the greenhouse gas (GHG) reduction goals as stated in our Sustainability Plan. Our current commercial space, combined with an expiring lease, is not conducive to any significant energy efficiency investment. We do not have a green lease that would incentivize the building owner/property managers to undertake significant capital improvements. Both cultural and technological change will be needed to reduce GHG emissions through promoting alternative, still developing video-conferencing technologies in lieu of airline and ground travel to review proposals. Institutional and leadership challenges include implementing

a comprehensive telecommuting program that would allow us to significantly reduce GHG emissions associated with employee commuting.

NSF is working hard to convince GSA to allow us to achieve our reductions through the Green lease of a LEED gold certified, energy and water efficiency integrated building when our current commercial lease expires in 2013. Inadequate support from GSA will make it extremely difficult for NSF to achieve its sustainability targets and goals. However, we still intend to institutionalize our sustainability goals, and make achieving our GHG reduction targets part of the mission of the Foundation by promoting them through the Head of the Foundation to all employees.

III. GHG targets have been established for NSF

NSF’s strategy for meeting these target goals requires a two part phased-in approach. NSF resides in shared, commercially leased space administered entirely by GSA. The lease for the current space expires in 2013, with at this point, a move-in date for the new/renovated space in early 2014. Meeting the GHG targets listed above are predicated mostly on improvements to the new leased space and the terms of the lease beginning in 2014. Incremental improvements are expected to continue from the present date through the expiration of the current lease, but are not expected to yield more than minor progress towards the goals. Given the short time remaining on the current lease, NSF will be unlikely to be able to initiate any significant initiatives regarding energy use, water conservation, or even major efficiencies until we move into a renovated/new building. NSF has no GHG emissions categorized as falling under scope 1.

NSF leased facilities contribute to two categories of emissions under Executive order 13514. These include:

- Scope 2 emissions from purchased electricity
- Scope 3 emissions from transmission and distribution losses (T&D losses) associated with purchased electricity

Table 1: Scope 2 and 3 target reductions are summarized below:

Scope	Description	Bldg	Baseline Emissions (metric tons CO _{2e})	Predicted Emissions Reduction (metric tons CO _{2e})	% Emissions Reduction
Scope 2	Purchased Electricity	I	8,223	3,262	40%
Scope 3	Transmission and Distribution Losses (T&D) from Purchased Electricity	I	542	215	40%
	Property Manager Energy Consumption	I	1,558	261	17%
	Property Manager Energy Consumption	II	1,150	251	22%
	Total Facility-Related Scope 3	I & II	3,249	727	22%

IV. Plan Implementation

- a. Internal Coordination and Communication: The SSO is primarily responsible for communicating the goals and outcomes to NSF senior management. This includes coordination and regular communication with our Chief Financial Officer, Chief Information Officer, Chief Operating Officer, and Chief Human Capital Officer, and the Office of the General Counsel, as well as the supporting program directorates. The Head of NSF, the senior executives, and interested employee groups have been given informational briefings on the contents of EO 13514, and what it means in terms of needed institutional support, and implementing administrative activities. The contents of the NSF Sustainability Plan will be appropriately coordinated and disseminated throughout the entire Foundation on a regular basis, and progress briefings will also be provided on a quarterly basis to the Sustainability Council.
- b. Coordination and Dissemination of the Plan to the Field: This section is not applicable, NSF has no field offices in the United States.
- c. Leadership and Accountability: NSF has a designated Senior Sustainability Official, Adam Silverman. Other senior management, including the Head of the Foundation, Dr Marrett, and the National Science Board have voiced their commitment to environmental sustainability as promulgated under EO 15314 and associated orders and regulations. Sustainability is addressed under the category of stewardship, in the appropriate Performance Plans.
- d. Agency Policy and Planning Integration: The NSF Sustainability Plan has been integrated into the agency's strategic planning process in accordance with section 3 of the Government Performance and Results Act of 1993, as amended (5 U.S.C. 306). It has not yet been integrated into the budget process. Complete integration into agency policy and budget planning processes will be a gradual, iterative process since, as a small agency, NSF has not previously addressed any of these topics in a formal manner. This is the first year that we have actually established a baseline for GHGs and obtained senior management support for this effort throughout the Foundation. At this point, we expect that we will be adding progress reports on the Sustainability Plan to our standard scheduled reports to senior management on a bi-annual basis.

Please see Table 2 as attached – Critical Planning and Coordination for additional information.

- e. Agency Budget Integration: At this point in time, the NSF Sustainability Plan has not been specifically integrated into the Foundation's budget process, since this is the first year one has been developed. Funds associated with sustainability are part of the Foundation's previously authorized funds for relocating to renovated/new commercial leased space in 2014 when our lease expires in late 2013. Any future Agency budget integration, beyond that already planned as described above, will take place following the Foundation's established agency/OMB budget cycles and standard operating procedures. The Office of Information Resource Management will take the lead in such activities, when communicating to senior management and our budget office.

The Office of Information Resource Management/Division of Administrative Services (OIRM/DAS) has no separate sustainability funds set aside. Funding for products such as water saving faucet attachments, do not require separate budget line items and are included as part of NSF Central funds under: FOB Supplies & Materials (0712) or Admin. Services Equipment (0880). The full lines would be noted as 02060100-0710-0712-2600 or 02060100-0710-0880-3110 (or 3120 if over \$25K).

f. Methods for Evaluation of Progress: NSF intends to evaluate our progress on meeting our targeted GHG reductions an annual basis by contracting for the services of an independent energy management contractor. In addition, our environmental staff routinely tracks the initiation of individual environmental projects and outreach efforts initiated within the Foundation and reports on relevant metrics to interested staff, and posts the same on our internal sustainability website. Internal tracking and development of all sustainability metrics is done in accordance with the guidance provided under EO 13514. Both the SSO and environmental staff person serve on interagency committees sponsored by CEQ/OFEE and use the guidance promulgated by those groups in determining the appropriate metrics and validation of projects under our Sustainability Plan. The Foundation will be working towards establishing an environmental management system over the next few years.

V. Evaluating Return on Investment

Our energy auditor contractor, EMO, conducted a life cycle cost assessment of potential conservation measures using the Federal Energy Management Program's (FEMP) Building Life-Cycle Cost (BLCC) module 5.3-08. The Building Life-Cycle Cost Program BLCC 5.3-08 was developed by the National Institute of Standards and Technology (NIST) to provide computational support for the analysis of capital investments in buildings.

The program calculates net present value, savings-to-investment ratio (SIR), adjusted internal rate of return (AIRR), simple payback (SPB) and discounted payback (DPB). BLCC estimates are calculated in present-value dollars, that is, all future costs are discounted to a present value as of the base date and summed to arrive at the total life-cycle cost of a project alternative.

Some of key BLCC parameters assumed for this analysis include the following:

- Federal Discount Rate = 3.0%
- Maintenance Escalation = neglected
- Life Cycle Period = 25 years
- Federal Energy Management Program Utility Escalation Rates

NSF does not have an established methodology regarding the use of ROI on conservation measures, so at this point in time, we have accepted the use of the FEMP BLCC methodology also used by our energy auditor to monetize priorities. Non-monetary factors are equally critical and are weighed carefully in the decision-making process. Factors that will be considered by the agency, in addition to a ROI BLCC analysis include: any social costs/benefits to both external and internal stakeholders; environmental costs and benefits; and climate change risk and vulnerability.

As a small federal agency with no full time dedicated environmental staff, NSF has no experience in constructing a business case for conservation or sustainable operations and methods. We are, as part of our planning process for the new lease in 2013/2014, currently developing and documenting our decision-making process using the factors noted above. We are paying particular attention, as part of our design process, to mission-specific costs and benefits and improvements in our operations and maintenance operations. At this time we have no deferred investments, and expect none.

VI. Transparency

NSF has made the results of our initial energy audit available to all NSF employees and the public. We intend to provide the results of the contractor's evaluation of our Scope 1, Scope 2 and 3 GHG emissions and goals to all NSF employees. The Sustainability Plan and updates will be posted on our internal web-site for all employees. In addition, we have an extensive outreach environmental sustainability website with information on a wide variety of related topics, and will continue to share information on changes and progress towards our GHG reduction targets on this website. We do have an internal email alias that is often used by employees at all levels to ask questions regarding sustainability and conservation at NSF. The same alias is also used by employees to suggest improvements and new initiatives. We also intend to make available to the public our Sustainability Plan upon request.