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A River of Energy Solutions

NASA Energy Management Systems and Tools

Holger Fischer

Energy Program Manager - NASA HQ – August 8, 2011

Agenda



- NASA 's Sustainability Policy
- NASA Environmental Tracking System
- Performance Reviews
- Functional Reviews
- Spacebook
- Internal Working Groups

NASA's Sustainability Policy

NASA's sustainability policy is to execute NASA's mission without compromising our planet's resources so that future generations can meet their needs.

Sustainability also involves taking action now to provide a future where the environment and living conditions are protected and enhanced and in that future NASA will have the resources it needs to perform its Mission.

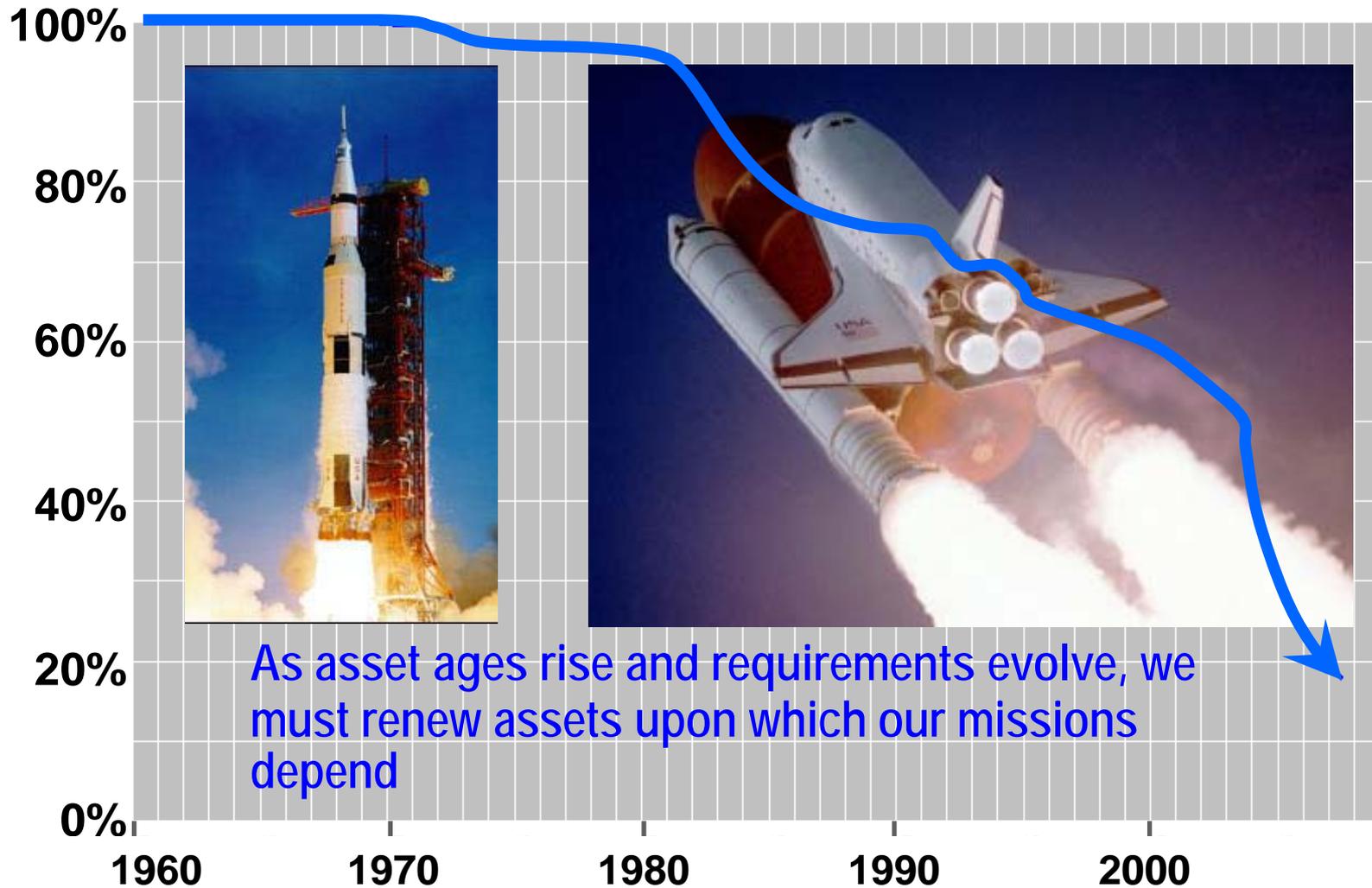
NASA is committed to the intent of Executive Order 13514.

NASA is integrating sustainability principles and methods into existing systems, processes and decision-making, influencing both long-term planning and short-term actions.

Sustainability will gradually become part of NASA culture.

NASA's Sustainability Policy

Share of NASA facilities assets under 40 years old



NASA's Sustainability Policy

- NASA Centers have responsibility to meet energy/water and other sustainability goals
 - Five Year Energy and Water Conservation Plan
- NASA HQ policy and reporting function
- NASA HQ is taking more active role in planning and implementation

NASA Sustainability Policy

- NASA Policy Directive (NPD)8500 – NASA Environmental Management
 - Each NASA organizational element is responsible for incorporating sustainable practices in its missions and activities
- NASA Procedural Requirement (NPR) 8570 – NASA Energy Management Program
 - Identifies the requirements and responsibilities by which NASA will implement Federal law, Executive Orders, and NASA policy

NASA Environmental Tracking System

- The NASA Environmental Tracking System (NETS) is an automated application and database supporting:
 - Mandatory agency environmental reporting
 - Agency-wide performance metrics
 - Environmental Functional Management



NASA Environmental Tracking System



NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION

NASA Environmental Tracking System

hfischer @ HQ

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Photo Credit: NASA

Suggestions and Comments: Please contact us with any problems, changes or additions you think may make this a more useful application. You may call the NETS Help Line at (216) 433-2300 or send an [e-mail](#).

Visit the [NETS Web Site](#) for more information about the NASA Environmental Tracking System.

NASA Environmental Tracking System



NATIONAL AERONAUTICS
AND SPACE ADMINISTRATION

NASA Environmental Tracking System

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Energy & Water

HQ-Headquarters

Select Site

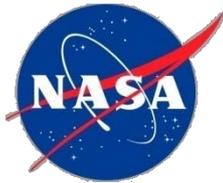
Help

- Annual Energy
- Annual Training Headcount
- Energy Intensity
- Goal Excluded Facilities
- ESPC/UESC Projects
- Facility Area Summary
- Initiative
- Metering
 - Electricity Metering
 - Natural Gas Metering
 - Steam Metering
- PPBES Exhibit 55
- Project
- Quarterly Energy and Water
- Quarterly Ad-Hoc
- Renewable Energy Certificates
- Self Generated Renewables
- Reports
- Status

Curator(s): [Bob Purgason](#) / [Joe Homan](#)
Responsible NASA Official: [Michael A. McNeill](#)
Organization Supported: NASA HQ Environmental Management Division
Last Updated: Jun 02, 2010
[NASA Website Security & Privacy Statement](#)

NASA Environmental Tracking System

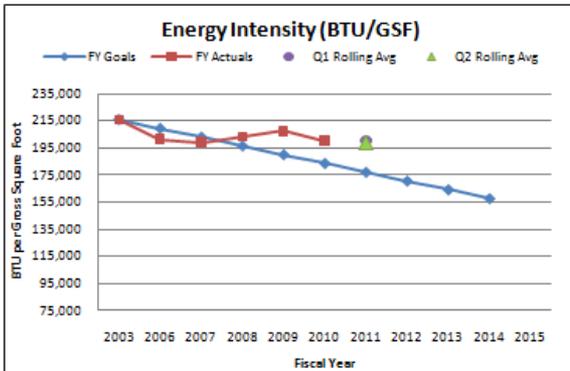
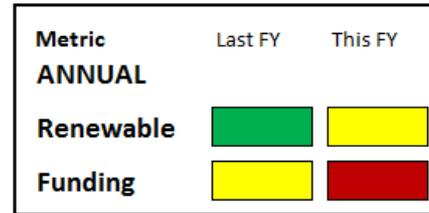
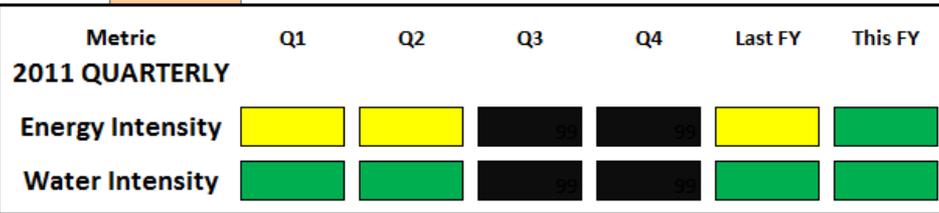
- Data is entered into the NETS database by Centers
 - Annually/Quarterly
- Consolidated agency reports generated by NASA HQ
- Upgrades to NETS include planning and forecasting tools
- Dashboards for planning and trending purposes are generated from NETS data



Management Dashboard

Sample

Center **All NASA**

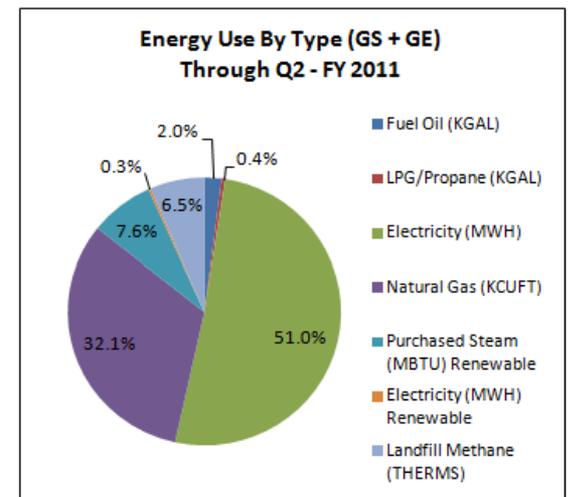
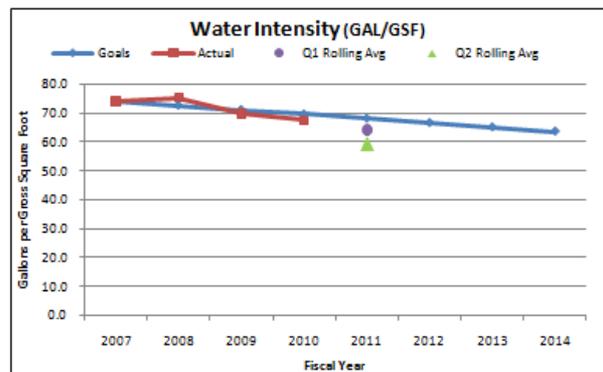
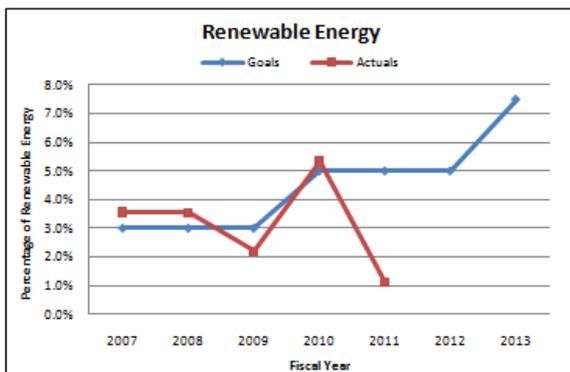


All NASA
31,897,248
39,460,081
200,362
151,134
49,229
\$196,282,616.19
\$49,070,654.05

Center
 GSF for Goal Subject Buildings in 2010
 GSF for Water Intensity in 2010
 2010 Btu/GSF
 2015 Btu/GSF Goal
 Btu/GSF reduction needed to meet goal
 Money needed to meet goal
 Level spending over the next 4 years

All NASA		
Rolling Avg. vs Baseline	Current Q vs. 2003 Q	2011 Q2 vs. 2010 Q2
-8.00%	-6.15%	-3.19%

A reduction need of zero means that the center was meeting/exceeding the 2015 Goal for Btu/GSF in 2010

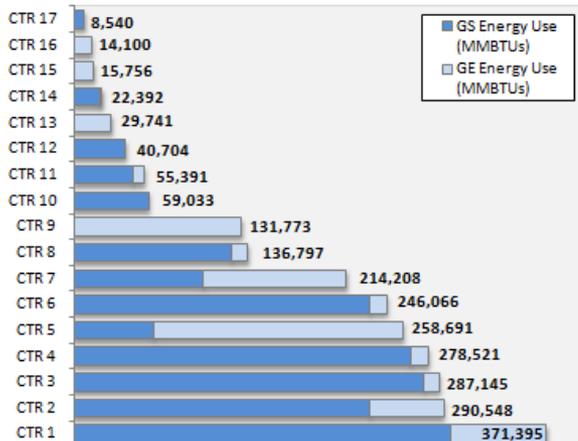




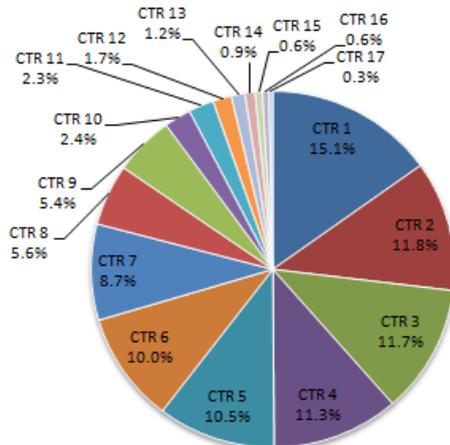
Management Dashboard

Sample

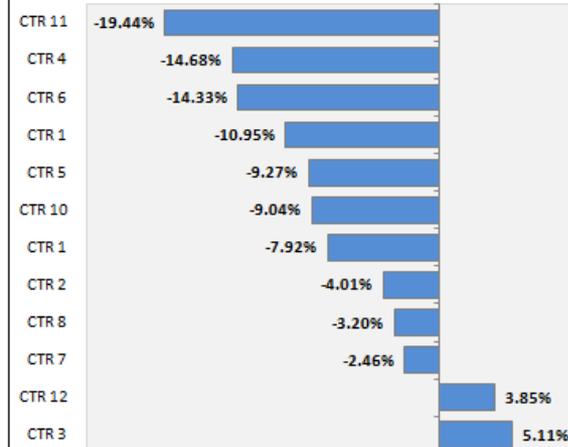
NASA - FY 2011 Q2 - Top Energy Users (MMBTUs)



NASA - FY 2011 Energy Use Profile Q2 - GS + GE



2010 - Top GS Energy Intensity Reduction (%)

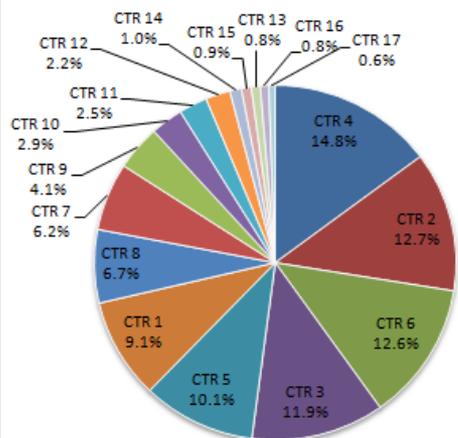


Note: Figures for both charts are Goal Subject plus Goal Excluded

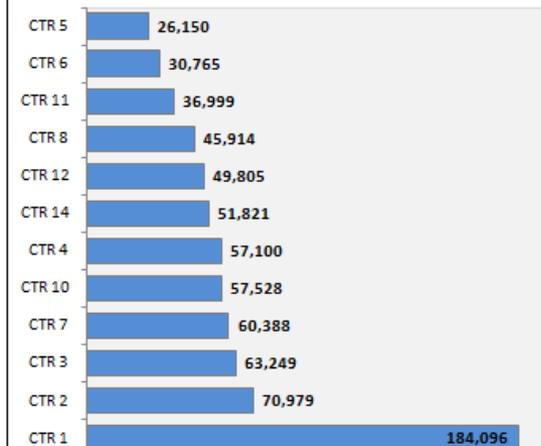
NASA - FY 2011 Energy Cost (\$K) - Through Q2



FY 2011 Energy Cost Profile Through Q2 - GS + GE



2011 Q2 - Top GS Energy Intensity (BTU/gsf)



Performance Reviews



- Senior Management Baseline Performance Review – NASA HQ and Centers
- Monthly review with performance data presented on quarterly basis

FY 2010 Energy Intensity Reductions (%)



DASHBOARD
ALL NASA CENTERS



Functional Reviews

- Provides visibility of Center Energy Programs within the Center and with HQ
- Provides an external perspective to the Center
- Improves communication and understanding between NASA HQ and the Centers
- How does Center support mission by complying with Federal Statutes, Executive Orders, and NASA Policy

Functional Reviews

Sample

- Facility Projects
- O&M
- Metering
- Purchases
- Audits

FY 2011	Energy	Water
Roles & Responsibilities ←	G	G
Planning & Budgeting ←	G	G
Communication & Reporting ←	Y	Y
Utility/Fuel Cost & Demand ←	G	G
Goals Performance ←	Y	G
Investment ←	Y	Y

Functional Reviews

- Positive Observations
- Recommendations
- Final Report
- Corrective Actions



Spacebook

- The Energy Management Community of Practice (CoP) portal, contains a variety of resources including requirements, tools, links, contacts, and metrics, etc.
- The Energy Management Working Group portal, which is restricted to energy managers and support personnel was created to provide a platform for energy managers to share Agency and Center specific project and performance data
- The portal also has links to related Spacebook pages on other NASA sustainability efforts, such as GHG management.

Environmental Management Portal

FIND IT. SHARE IT. WORK SMARTER.

Welcome to the Energy Management (EM)

Community!



The Energy Management Community was created to aid NASA missions with minimizing their environmental impact. This site was created to get useful information out to the Energy Management Community quickly and easily in order to help people complete their work more efficiently.

In the [Documents](#) area, you may upload or download documents to share with others. If you have an announcement, would like to add a link or other new content to the portal, or have suggestions for improving the site, please [Contact Us](#).

This Community consists of the following sections:

- [EM 101](#)
- [Requirements](#)
- [Stakeholders](#)
- [Metrics](#)
- [Initiatives](#)
- [Threats/Risks](#)
- [Opportunities](#)
- [Links](#)
- [Contacts](#)
- [Tools](#)
- [Training](#)

Announcements

FEMP First Thursday Seminars

 1/12/11 3:02 PM

 Edit  Permissions  Delete

See schedule for FY2011 of FEMP First Thursday Seminars in the [Training section](#) or [click here](#).

 By [Holger O. Fischer](#) | 3 Views, 0 Comments

Welcome from Energy Management Community Founder

Welcome to the Energy Management Community section of the Environmental Management Portal! Since our community's members are spread across the NASA Centers and Facilities, this portal serves as the main collaboration tool for our community. Here you will find a variety of tools, resources, and information used within Energy Management organized by their various functions.

If you are new to the Energy Management CoP, visit the [EM 101 page](#) to learn more about the community. If there is something missing that needs to be shared with the community, send your comments or suggestions to [Holger Fischer](#).

Points of Contact:



[Wayne Thalasinios](#) - Headquarters
Energy Management Community of Practice POC
(202) 358-3811



[Holger Fischer](#) - Headquarters
Energy Efficiency Panel POC
(202) 358-0416

Energy Management Working Group



NASA's Energy Management Working Group is available to anyone who wants to get involved in promoting and implementing energy efficiency, facilitating the generation of renewable and alternate energy, and providing innovative new technology to help the Agency to be more energy efficient. Within the working group you can find many resources including projects and initiatives, functional management, requirements, and reporting tools, and all of the current NASA Dashboard Rollups.



Energy » [Home](#)

About Group

Energy

This working group addresses energy efficiency in the Agency.

Who can join: Anyone who wants to get involved in - promoting and implementing energy efficiency - help to facilitate the generation of renewable and alternate energy - provide innovation, new technology to help the Agency to be more energy efficient

Associated Center: The Agency

Membership Requests: 1

Moderator(s) for this group:

- Ryan J. Miller
- Wayne B. Thalasinos
- Holger O. Fischer

[Invite People to Join](#) |
 [Add Moderator](#) |
 [Edit Group Information](#)

Blogs

FEMP First Thursday Seminar---Executive Order 13514

 2/10/10 1:14 PM

[Edit](#) |
 [Permissions](#) |
 [Delete](#)

Executive Order 13514 challenges each federal agency to meet new goals that have been set for energy and water conservation. The Federal Energy Management Program's (FEMP) most recent First Thursday Seminar

Energy Management Community of Practice Portal



The Energy Management Community was created to aid NASA missions with minimizing their environmental impact. Within the Energy Management Community of Practice (CoP) portal, you will find a variety of resources including requirements, stakeholder, and initiative information, tools, links, contacts, and metrics.

[+ Click Here to Visit the Energy Management Community of Practice Website](#)

Group Calendar

Summary
Day
Week
Month
Year
Events
Export / Import

7/21/11

S	M	T	W	T	F	S
26	27	28	29	30	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	1	2	3	4	5	6

Time	Title	Type
There are no events on this day.		

Showing 0 results.

Group Documents

Showing 1 result.

Group Membership Requests

The following users have requested to join this group:



Daniel D. Helfrich



Approve



Deny

Members

This group has 29 members.



Holger O. Fischer



DONNA L. LEACH



Ryan J. Miller



Felicia L. Olinger



Rusty McLaughlin

Next ▶

Folder	# of Folders	# of Documents	
Current NASA Dashboard Rollup	0	3	
Energy Efficiency Panel <u>Subfolders:</u> 2010 EEP Face-To-Face	1	4	
Metrics <u>Subfolders:</u> FY 2010, FY 2011	10	167	
Tools	0	0	
functional management <u>Subfolders:</u> Energy Efficiency Panel, community and VITS, planning	7	52	
projects and initiatives <u>Subfolders:</u> training, water treatment	4	3	
reporting <u>Subfolders:</u> OMB Scorecards, annual report to Dept of Energy	5	2	
requirements <u>Subfolders:</u> Federal	3	6	

Showing 8 results.

Access from my desktop.

Activities

July 7

- Felicia L. Olinger uploaded a new document, WSTF Q2 Dashboard.
9:41 AM View Document Go to Folder
- Felicia L. Olinger uploaded a new document, WFF Q2 Dashboard.
9:41 AM View Document Go to Folder
- Felicia L. Olinger updated a document, SSC Q2 Dashboard.
9:40 AM View Document Go to Folder
- Felicia L. Olinger uploaded a new document, SSC Q2 Dashboard.
9:40 AM View Document Go to Folder

Internal Working Groups

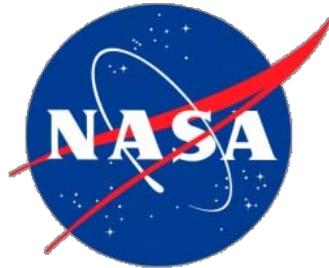
- Strategic Sustainability WG
 - HQ cross organizational working group for managing the Sustainability Strategic Performance Plan and OMB scorecard. Standing meeting every other week.
- Energy Efficiency Panel
 - NASA cross organizational panel for addressing energy policy and planning. Meeting every 6 months.

Internal Working Groups

- Energy Community of Practice
 - NASA forum for coordinating energy program actions. Video teleconference meeting every other month.
- Water Community of Practice
 - NASA forum for coordinating water program actions. Video teleconference meeting every other month.

Questions?

Contact Information:



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