



GovEnergy
www.govenergy.gov

The Premier Energy Training Workshop
and Trade Show for Federal Agencies

A River of Energy Solutions

Performance Tracking and Reporting

Jennifer C. MacDonald – Director, DOE Sustainability Performance Office

DOE Background

2nd largest user of facility energy in the Federal Government

In FY 2010, DOE used, occupied and emitted approximately:

- **30 trillion Btus energy; 3% of Government total**
- **5.2 million MWH electricity; 9% of Government total**
- **7.4 billion gallons of potable water; 4% of Government total**
- **129 million square feet; 4% of Government total**
- **4.0 million MTCO₂e Scope 1 & 2 GHG; 8% of Government total**



DOE Requirement Targets

<u>Sustainability Goals</u>	<u>Requirement</u>
Greenhouse Gas Emission Scopes 1 and 2 Reduction	28% (2020)
Greenhouse Gas Emission Scope 3 Reduction	13% (2020)
Energy Intensity Reduction (Btu/ft ²)	30% (2003 – 2015)
Renewable Electricity Consumption Increase	7.5% (2013 forward)
Fleet Petroleum Reduction	30% (2005 – 2020)
Fleet Alternative Fuel Increase	10% (2005 – 2015)
Fleet Inventory Reduction	35% (2005 – 2015)
Potable Water Intensity Reduction (gal/ft ²)	26% (2007 – 2020)
Industrial/Other Water Consumption Reduction	20% (2010 – 2020)
Recycling & Waste Diversion	50% (by 2015)
Procurements Meet Sustainability Requirements	95% (each year)
Buildings Meet Guiding Principles	15% (by 2015)
Net-Zero Energy in New Facilities	100% (by 2030)

DOE Requirements & Reports

Requirements and reports on sustainability activities are mandated by:

- National Energy Conservation Policy Act (NECPA)
- Energy Policy Act of 2005 (EPAAct '05)
- Energy Independence and Security Act of 2007 (EISA)
- Executive Order 13423 *Strengthening Federal Environmental, Energy, and Transportation Management*
- Executive Order 13514 *Leadership in Environmental, Energy, and Economic Performance*
- DOE Order 436.1 *Departmental Sustainability*
- DOE Order 430.1B *Real Property Asset Management*
- Reports:



DOE Site Reporting Systems

- **Facilities Information Management System (FIMS)** - Real property attributes and use
- **Energy Management System version 4 (EMS-4)** - Site energy and water consumption and costs
- **Consolidated Energy Data Report (CEDR)** – Metering requirements, renewable energy generation and purchases, sustainable buildings, training, new building construction and major renovations, potential conservation and renewable energy measures
- **Site Sustainability Plan** - Narrative discussing future plans, expected performance, and funding for all sustainability requirements
- **Pollution Prevention Tracking and Reporting System (PPTRS)** - Environmental, purchasing, and best practices data
- **Federal Automotive Statistical Tool (FAST)** - Fleet inventory and fuel use
- **Federal Aviation Interactive Reporting System (FAIRS)** - Federal aircraft operations and cost data

Facility Information

Through the DOE Facility Information Management System (FIMS) several data points for reporting and projections are collected:

- Energy consuming goal subject buildings and trailers
- Energy consuming other structures and facilities (OSF)
- Energy consuming goal excluded buildings and trailers
- Additional data points:
 - Cool roofs
 - Deferred maintenance
 - Estimated disposition year
 - High Performance Sustainable Building status, compliance date

DOE Consolidated Energy Data Report

CEDR is an Excel workbook that captures current fiscal year and planned data

Major elements include:

- **On-site renewable energy generation**
- **Direct and financed investments in energy efficiency**
- **Advanced and standard metering**
- **Training**
- **New building construction and major renovations**
- **High Performance Sustainable Buildings status and planned compliance**
- **Potential conservation and renewable energy measures**
- **Data centers**
- **Funding (direct, ESPC, UESC)**

DOE Site Sustainability Plans

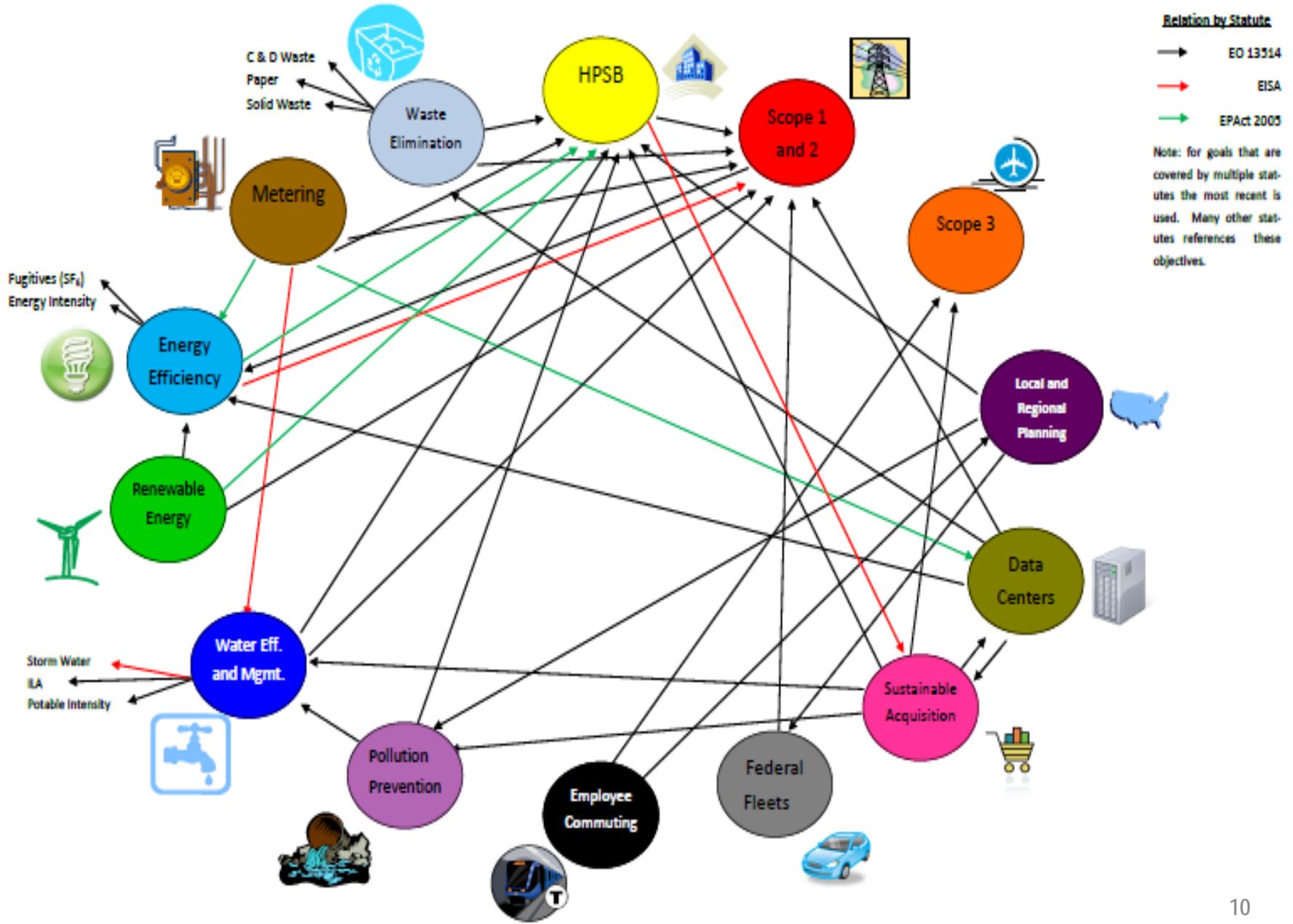
Annual Site narratives complement data by providing information on:

- **Major initiatives or changes to mission/facilities that contribute to goal performance (positively or adversely)**
- **Expectations of future performance (major initiatives or obstacles)**
- **Best practices, lessons learned, and success stories**
- **Renewable energy systems and/or efficiency measures**
- **Local and regional planning activities**
- **Policies to reduce waste and pollution**
- **Site innovations deployed to support sustainability goals**

Interconnected Goals

- Over a dozen main sustainability goals mandated by statute and Executive Order
- Investment in one goal can reap rewards in other goals
- Goals are not silos but are more like a web
- Sustainability Web places focus on interconnected goals

SUSTAINABILITY WEB



Connected Example

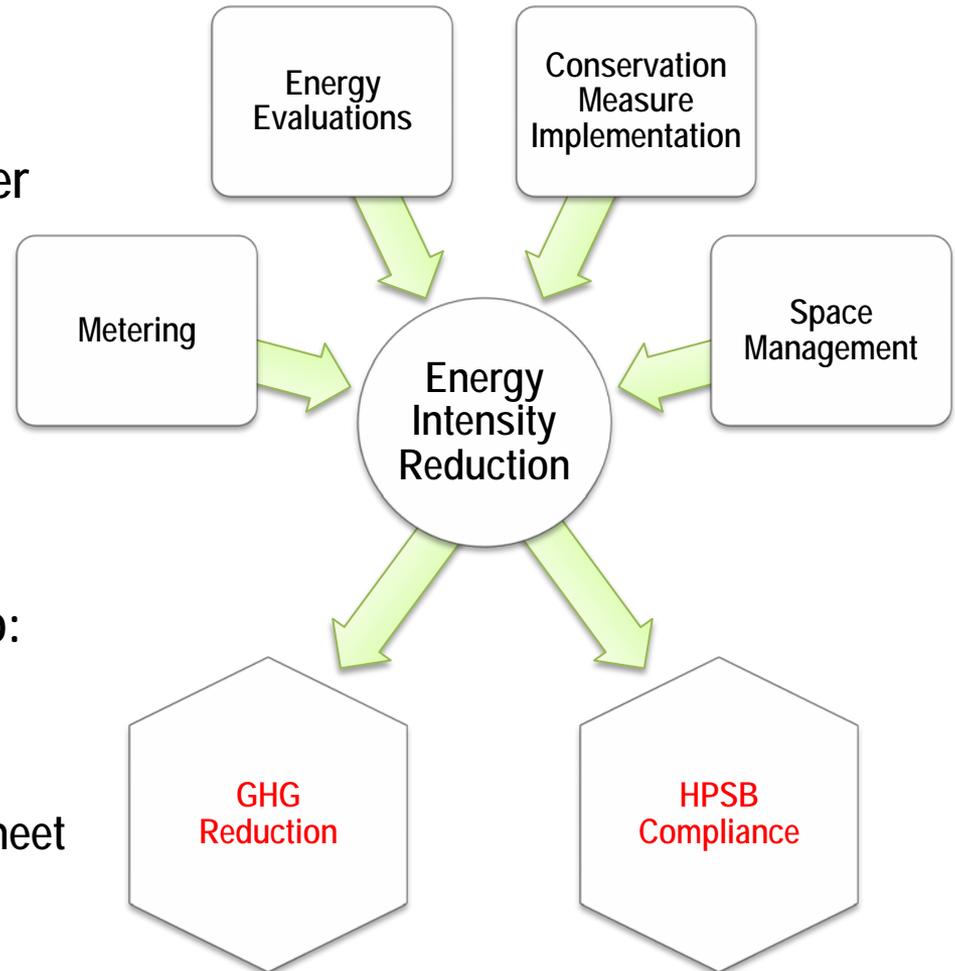
Energy Intensity Reduction 30% by FY 2015 (EISA Sec 431)

Energy intensity is impacted by other goals:

- Energy evaluations (EISA)
- Metering (EISA & EAct)
- Space management (EO 13514)

Energy Intensity attainment will also:

- Reduce GHG emissions
- HPSB compliance
 - Retrofits are also needed to meet HPSB GPs



DOE Internal Reporting Progress Scorecard

Sustainability Status		FY 2011 Execution			
		Q1	Q2	Q3	Q4
1	Establish Sustainability POC		✓		
2	Submit Complete and Timely Annual Sustainability Planning documents				
	2a. Site Sustainability Plans (SSPs) (December 1)	✓			
	2b. Annual Budget Planning	✓	✓	TBD	TBD
	2c. High Performance Sustainable Buildings (HPSB) Plan			TBD	TBD
	2d. Annual Metering Plans (August 15)				TBD
3	Submit Complete and Timely Required Data				
	3a. Budget Data	✓	✓	TBD	TBD
	3b. EISA 432 and benchmarking data (CTS - November 30)				TBD
	3c. Facility and HPSB data (FIMS - September 30)				TBD
	3d. Building energy and water data (EMS4 - November 15)				TBD
	3e. Fleet data (FAST - November 23)				TBD
	3f. Pollution prevention and waste elimination data (PPTRS - December 1)				TBD
	3g. Greenhouse gas inventory data (December 2)				TBD
4	Meet Key FY 2011 Milestones*				
	4a. Reduce Scope 1 and 2 emissions by 2% (14% total from FY 2008)				TBD
	4b. Reduce Scope 3 emissions by 1% (2% total from FY 2008)				TBD
	4c. Reduce energy intensity by 18%				TBD
	4d. Meter 75% of site buildings for electricity				TBD
	4e. Meter 75% of electricity use				TBD
	4f. Assess 75% of facilities for energy and water measures				TBD
	4g. Maintain 7.5% renewable energy as percent of facility energy use (2.5% from post-1999 sources)				TBD
	4h. Reduce water use by 18%				TBD
	4i. Reduce petroleum use by 12%				TBD
	4j. Reduce fleet by 15%				TBD
	4k. 7% of building stock meets Federal Guiding Principles for HPSB				TBD
5	Consider Alternative Investment Opportunities, reinvest sustainability savings	✓	✓	TBD	TBD
6	Undertake Innovative Measures to Meet Sustainability Goals and Transform U.S. Energy Economy	✓	✓	TBD	TBD



DOE Under Secretary Scorecard for tracking progress on various annual reporting requirements

* Scored in December/January

DOE Internal Site Scorecard

Performance assumptions & methodology

All performance analyses based on data provided by DOE sites

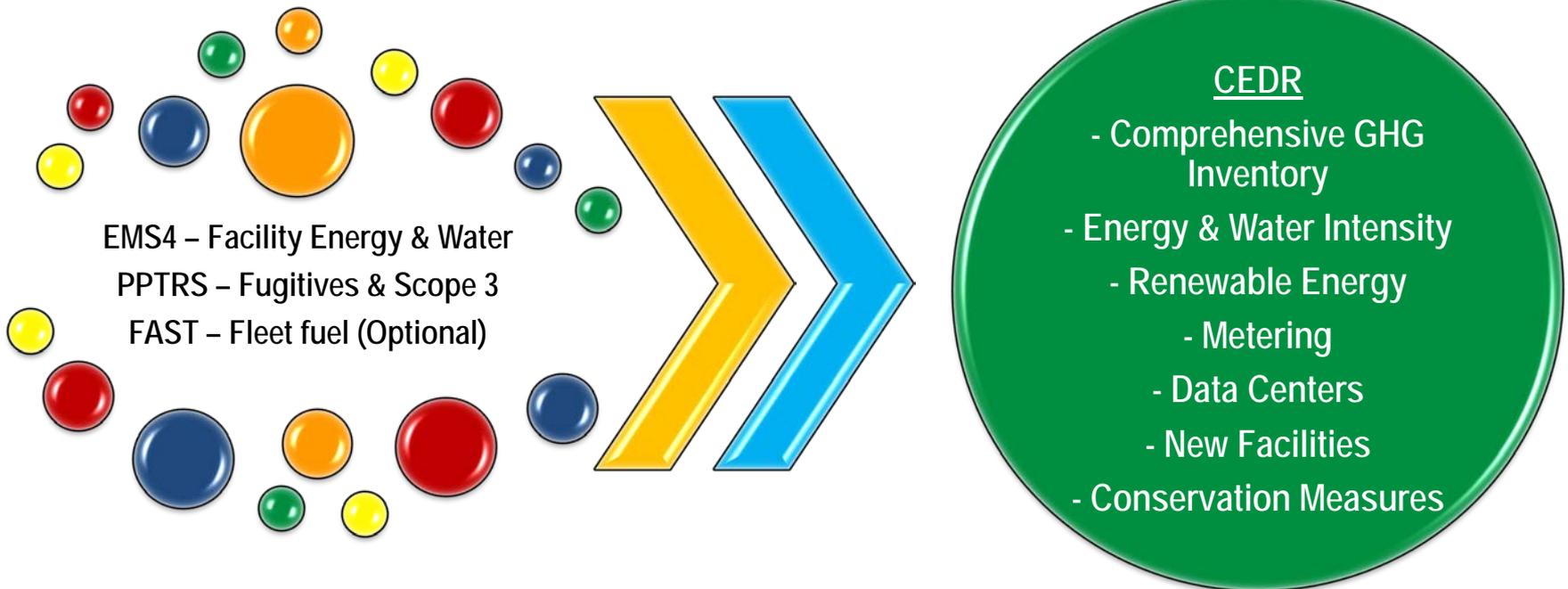
Projection assumptions & methodology

Projections based on data provided by DOE sites and a few assumptions

- Actual: CEDR
 - Buildings planned for HPSB compliance and conservation measures identified for energy and water
- Assumption: Decommissioning & Demolition
 - Buildings identified for disposition were used to estimate energy and water leaving DOE/site inventory based on average consumption per square foot

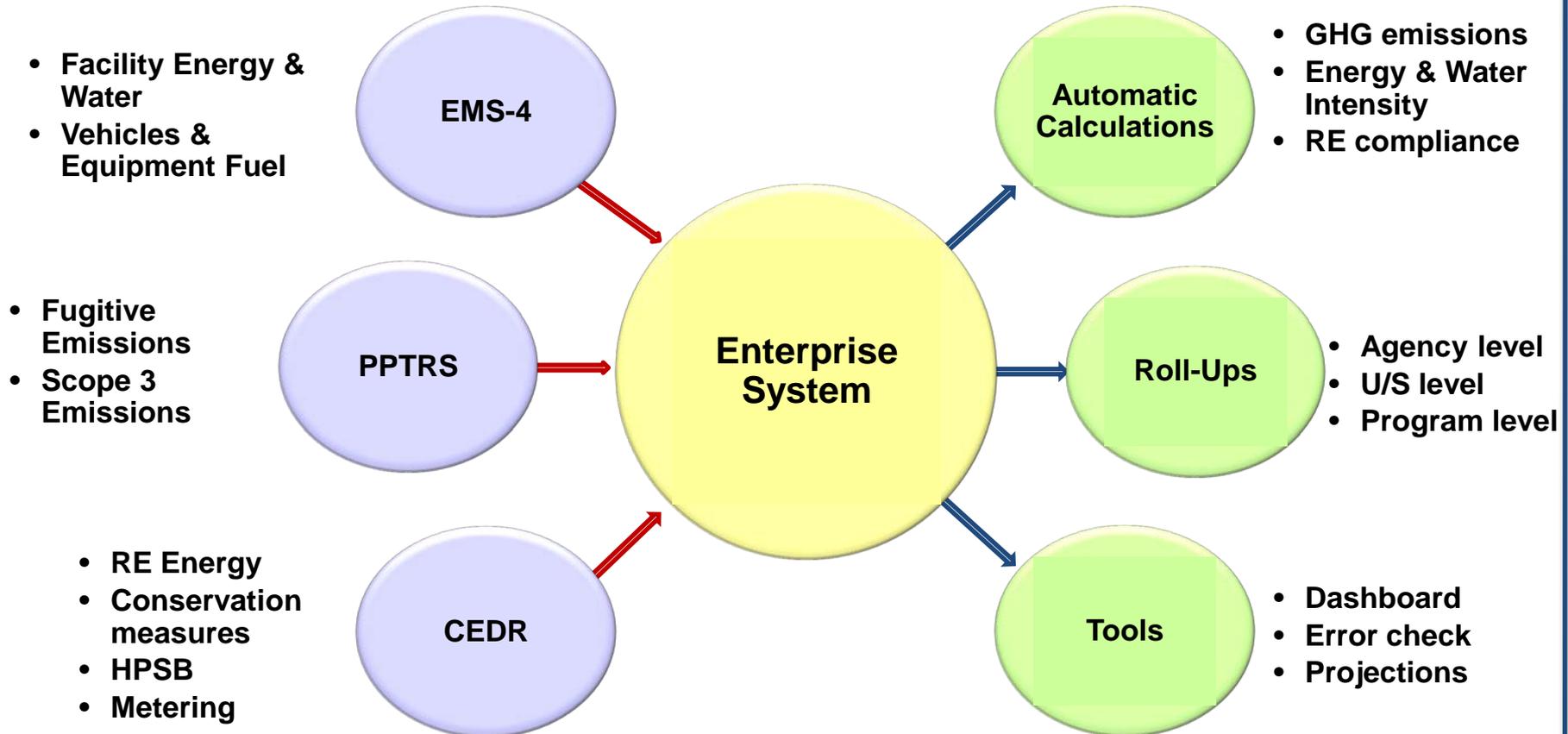
DOE Site Reporting Systems

Consolidation and streamlining of reporting for FY 2011:



DOE Site Reporting Systems

Long-term consolidation and streamlining:



Contact Information and References

E.O. 13514:

http://www.whitehouse.gov/assets/documents/2009fedleader_eo_rel.pdf

Agency SSPPs:

<http://www.whitehouse.gov/administration/eop/ceq/sustainability/plans>

DOE Sustainability Performance Office:

<http://www.sustainability.energy.gov>

Contact:

Jennifer C. MacDonald – (202) 586-8645

jennifer.macdonald@hq.doe.gov