

Out of the Dark Ages????



HU GHG Information Management
System

April 2011



Harvard University • Campus Services

Environmental Health & Safety

The way we were* ...



* Images obtained from various sources

Today...



Current GHG HU IMS System – MS Excel®

DATA SOURCES

DATA ANALYSIS

REPORTING & REVIEW

Energy Witness Data
Blackstone Production Data
Chilled Water Production Data
Standard Conversion Factors
MATEP Conversion Factors
Rowland Steam Conversion Factors
ISO NE Emissions Report
HCPPM Building Data
HDEL Electricity Purchase
Vehicle Fuel Purchase – Multiple Sources
Generator Fuel Purchase – FMO
Refrigerant Losses
SF6 Fume Hood Testing Losses
HMS/HDMS Data
HSPH Data
DOAKS Data
Southborough HMS Data
Harvard Forest Data
Concord Field Station Data
Arnold Arboretum Data
HRES Non-EW Data
HLS Non-EW Data
GSE Non-EW Data
School and Department ECM Data
HCPPM Capital Projects

HU Utility Conversion Spreadsheet

GHG Data Management Spreadsheet

ECM Reduction Data Management Spreadsheet

School and Unit GHG Data Review

School and Unit ECM Data Review

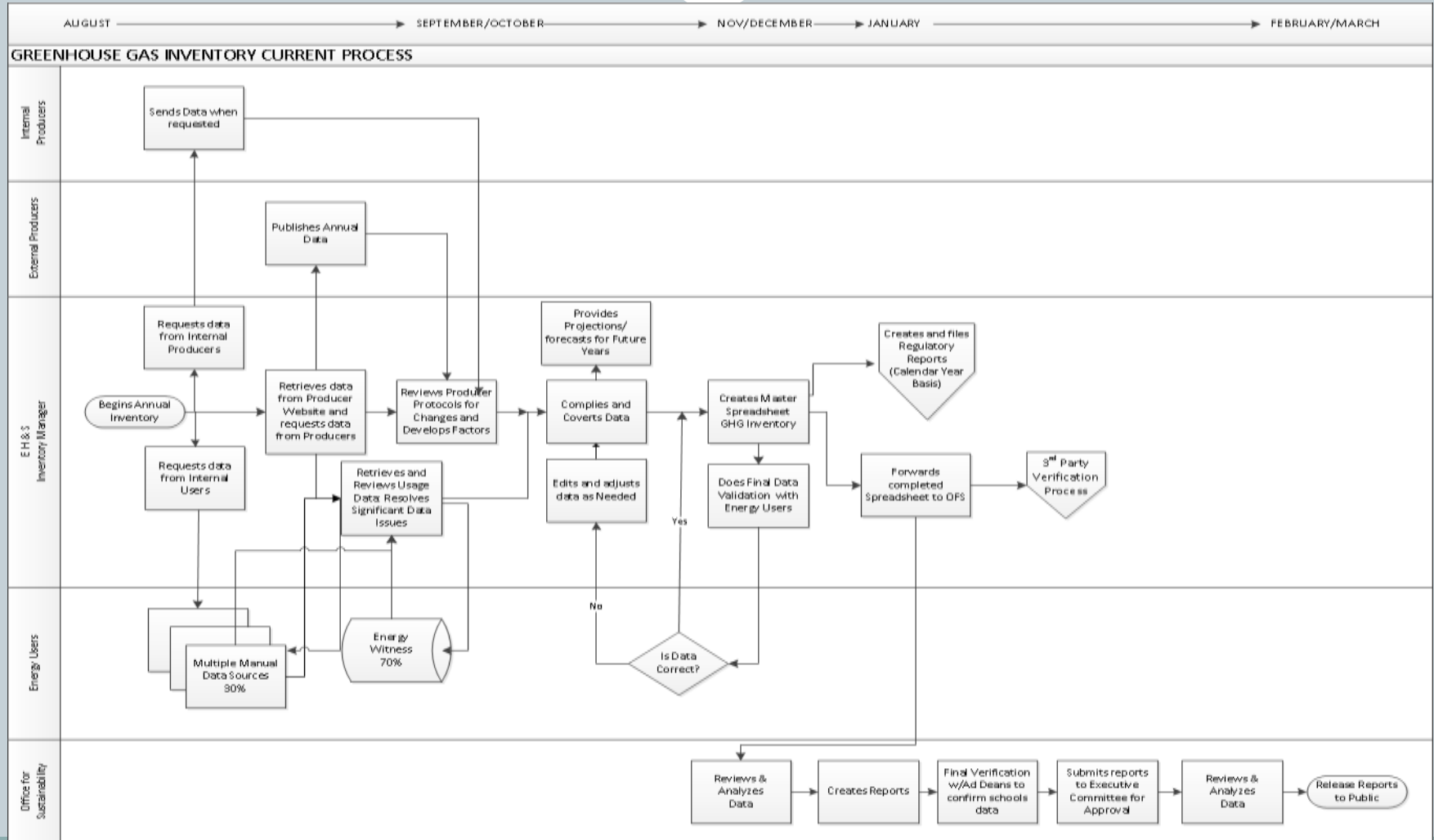
HU Data Reports

- Overall GHG Emissions
- Overall Energy Use
- % Reduction (GHG/Energy)
- Baseline/Overall
- Reports by School/Department/Tub/Building
- By Building Type
- By GSF
- Planned Reductions
- Regulatory Reporting

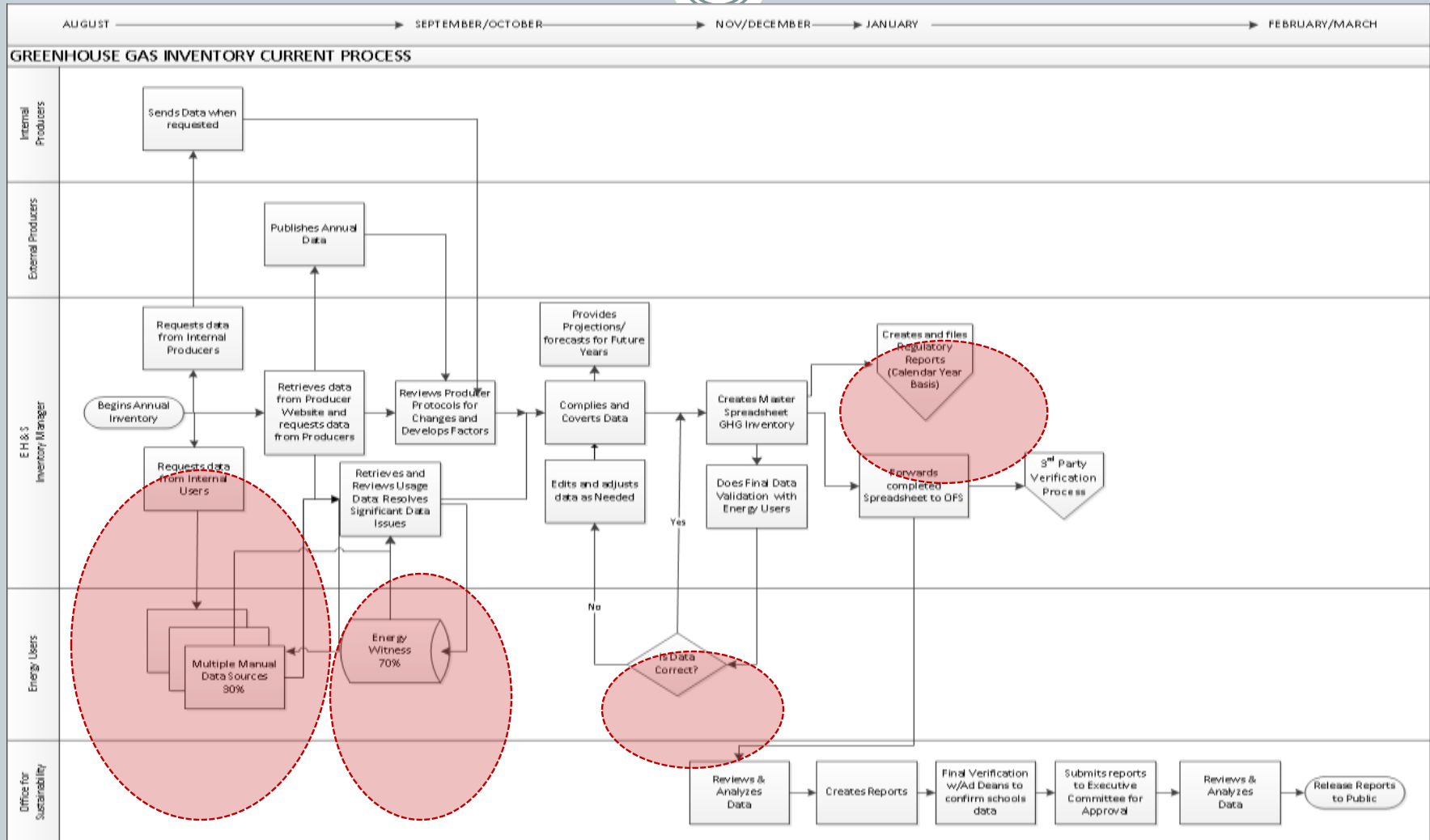
Manual Data Entry

2-Way Manual Data Exchange

Current GHG Process Map



Current GHG Process Map



New GHG IMS System

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HCPPM Capital Projects
Scope 3 Data Sources

DATA ANALYSIS

GHG Information Management System – Web Based

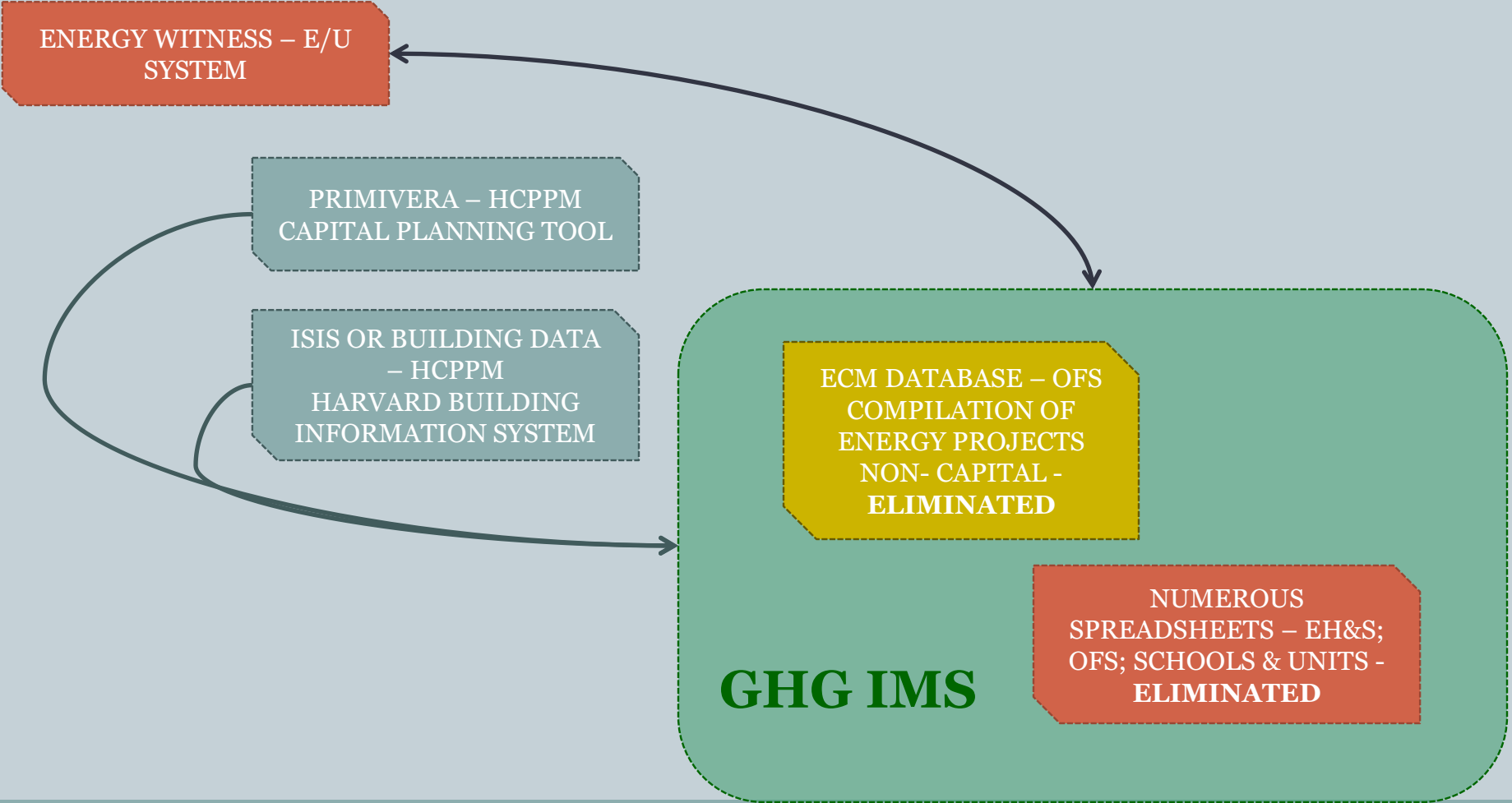
- Data Exchanged Electronically between Systems – Including Energy Witness; Primivera; ISIS
- Additional Data Uploaded 2-ways
 - Manual by Schools/Units
 - Electronic by Schools/Units
- Review and Adjustment of Data by School/Unit
- Verification of Data by EHS/OFS

REPORTING & REVIEW

HU Data Reports

- Overall GHG Emissions
- Overall Energy Use
- % Reduction (GHG/Energy)
- Baseline/Overall
- Reports by School/Unit/Tub/Building
- By Building Type
- By GSF
- Planned Reductions
- Emissions by Scope – 1, 2 and 3 (Future)
- Regulatory Reporting
 - State
 - Federal

GHGIMS System Integration



Overall Goals of the GHGIMS



- **Required Goals**

- Improve Service Levels for Data Access, Usage & Reporting for Internal Stakeholders
- GHGIMS as System of Record: Provides Assurance that Current Data is Used
- Risk Mitigation
- Improved Productivity
- Improved Reporting: View, Verify, Benchmark and Forecast
- Enhanced Planning & Forecasting by Integrating Inventory and ECM Data
- Integration with Capital Planning and Project Management
- Enhanced Visualization Tools: Charts and Graphs

- ***Additional Goals of System (Nice-to-Haves)***

- Online System for Building Info (“basic EH&S”)
- Link directly to utility data from third-party utilities (NSTAR, National Grid, etc.)
- Enhanced Visualization Capabilities: Maps

New GHG IMS System Basic Reports



- Overall GHG Emissions in MTCDE
- Overall Energy Use in kBTUs
- % Reduction (GHG/Energy) from Baseline Year 2006
 - Baseline/Overall
- Reports by School/Unit/Tub/Building
 - Special School/Unit Reports
- By Building Type (e.g., based on HCPPM Building Data)
- By GSF (e.g., based on HCPPM Building Data; Adjustments)
- Planned Reductions (Based on ECMs and Capital Plans)
- Ad-hoc Reporting Feature
- Regulatory Reporting
 - State
 - Federal