

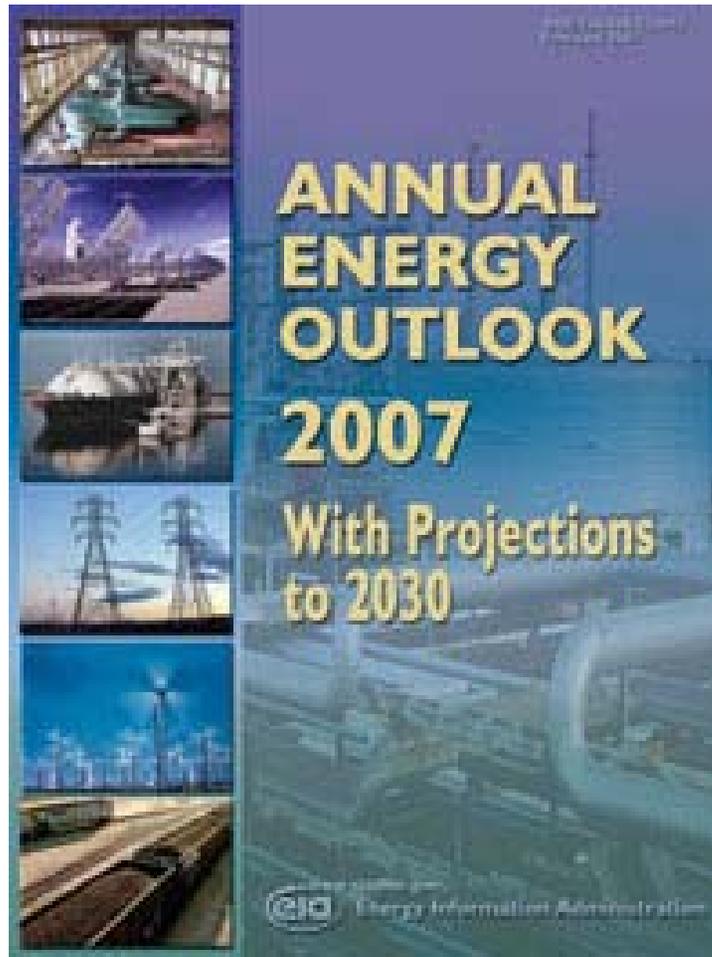
The Quality Control Process Used for Developing and Releasing the Annual Energy Outlook

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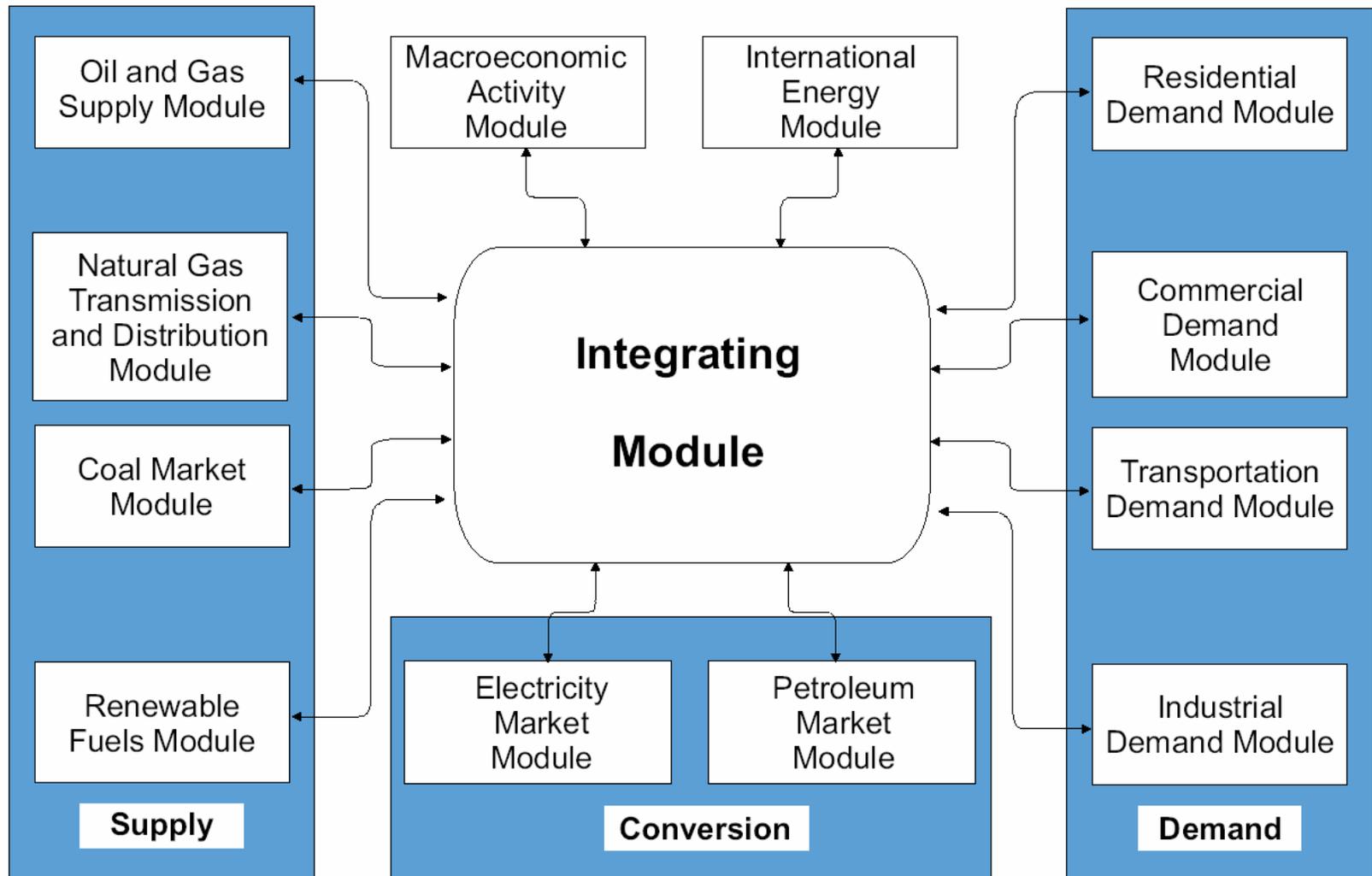
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This is a working document prepared by the Energy Information Administration (EIA) in order to solicit advice and comment on statistical matters from the American Statistical Association Committee on Energy Statistics. This topic will be discussed at EIA's Fall 2007 meeting with the Committee to be held October 18 and 19, 2007.

One of four major “products” produced by OIAF



National Energy Modeling System



Questions for the Committee

- Is the external review process **sufficient**?
- Do we need to **expand** the number or type of reviewers included in the process?
- Are there ways in which the review process could be **streamlined**?
- Are there **other aspects** of the AEO that need to be reviewed?
- How do we **balance** need to provide independent projections and analysis with stakeholder inputs we may not agree with?

Five Major Objectives for AEO Quality Control Process

1. AEO projections address areas of interest to stakeholders
2. Projections include input from all of EIA
3. Data presented in AEO is consistent with other EIA data
4. Modeling approach is applied correctly and produces unbiased projections
5. Model and projection results/analysis are completely documented

AEO Production Process is Year Round

- January-September: Data and model evaluation and development
- August-October: Projection development and analysis
- October-April: Publications/Documentation
 - August-January: AEO Retrospective Review (prior year's AEO)
 - October-February: AEO Summary
 - January-April: Methodology Reports

Quality Control Applied At All Steps in AEO Process

1. Reassessment of new historical data to update model relationships and to develop assumptions (Data)
2. Update of model structure and addition of new capability (Modeling)
3. Successive drafts of projection (Projection/Analysis)
4. Publication/Documentation of projection results and models (Documentation)

Extensive External and Internal Participation in Quality Control Process

- External Stakeholders
 - Formally: surveys, peer review process, working groups, independent expert reviews, and conference presentations
 - Informally: questions received from users and independent reviews/articles
- Internally
 - At the OIAF Office level by staff and management
 - By other EIA Offices through Category 1 review process, working groups, participation in the development of assumptions and models, review of draft projection results, and review of documentation
 - By EIA senior management through multiple presentations of key assumptions and projection results

Timing of Input to Quality Control Process Varies

- Much of external input to AEO quality control process, particularly the informal input, is “after the fact.” Users are reacting to published results
- Not always the case. Participation in Independent Expert Reviews and working groups during development process.
- Internal input to the process tends to coincide with the process and is incorporated in the AEO prior to release.

Quality Control During Data Update Process Is Predominantly Internal

- New historical data is reviewed internally by OIAF analysts and management for consistency with prior data
- Data developed through third party studies is reviewed by OIAF staff, in working groups, and with external experts
- STEO data used for early years is reviewed by OIAF analysts and management for consistency
 - Involves discussion with Short Term Energy Outlook analysts

Quality Control During Data Update Process Is Predominantly Internal

(Continued)

- Major exogenous assumptions, such as the world oil price, complemented by use of a Delphi approach with outside experts as well as EIA Offices, management, and staff.

Model Updates Subject to Extensive Quality Control Review at Multiple Levels

- Need for model updates identified through IERs, customer comments, and internal analyst review of energy market trends
- Proposed model updates discussed with working groups (composed of stakeholders) and OIAF management
- Internally completed updates reviewed by analysts, OIAF management, and in working groups
 - OIAF managers meet weekly to review model progress
 - Division Directors regularly meet with analysts to discuss modeling progress

Model Updates Subject to Extensive Quality Control Review at Multiple Levels

(Continued)

- Weekly run review held with analysts to track modeling progress
- Contractor updates reviewed by analysts, OIAF management, and in working group meetings
- Major updates involve review by Deputy Administrator (e.g., work on ethanol)
- Model updates reviewed by Statistical Methods Group as part of documentation review
- External peer review includes questions on modeling

Also, Extensive Projection/Analysis Quality Control Process

- OIAF managers meet weekly to discuss projection progress
- Weekly run review held with analysts to identify issues and track projection progress
 - Allows analysts in other areas to provide comments outside their work area
 - Alerts them to potential changes that may impact their efforts
- Deputy Administrator briefed on preliminary results for key variables (e.g., natural gas prices) early in process
- Preliminary projection results discussed with working groups (composed of stakeholders) to allow input prior to finalization

Also, Extensive Projection/Analysis Quality Control Process

(Continued)

- EIA Offices briefed on preliminary projection results prior to completion to get input
- Administrator and Deputy Administrator briefed on preliminary projection results prior to completion to get input
- External peer review includes questions on AEO projections
- Publication of Retrospective Review
 - Measures projection error over time
 - Provides input to future data, modeling, and projection efforts

Quality Control during Writing of AEO Summary Publication is Multifaceted

- Major analysis topics developed using input from customers collected through surveys and contacts
- Analysis topics approved by OIAF management and Deputy Administrator
- Outlines for all section approved by OIAF management
- Drafts of all sections reviewed and approved by Division Director and OIAF management
- Publication professionally edited 4 times
- Drafts reviewed 3 times by EIA Deputy Administrator and 1 time by Administrator

Quality Control during Writing of AEO Summary Publication is Multifaceted

(Continued)

- All sections reviewed or QAed by OIAF staff who were not involved in writing the section
- All major publication pieces go through Category 1 process that involves review by other EIA Offices
- External peer review includes questions on quality and appropriateness of AEO summary publication
- When errors are found, erratum posted online

Quality Control During Methodology Documentation Completes Process

- All methodology pieces start from a single template to give them a similar feel and look
- All methodology pieces are revised by modelers based on input from SMG reviews the previous year
- Drafts of methodology documentation are reviewed by responsible Division Director
- Draft final methodology documentation sections are reviewed and approved by OIAF Director
- Completed methodology documentation is sent to SMG for review on cycle that covers all sections over a 3 year time period

Summary

- AEO quality control process is extensive
- Quality control process
 - Involves both internal and external participants
 - Is applied at all levels of production process
 - Provides input to current and future processes
- But, quality control process is time consuming and resource intensive
 - For example, quality control process for writing AEO 2007 summary involved over 80 working days

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Thank you

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