

**Proposal for a NEMS Forecasting Team
in the
Office of Systems and Policy Support (OSPS)**

We propose to organize a NEMS forecasting team within the OSPS. The primary product of this team will be an annual forecasting report, largely based on NEMS, to forecast the impacts and benefits of NETL R&D Programs and technologies under a wide range of scenarios. The range of scenarios will be broad enough so that high-level decision makers at the FE and NETL can use the report as a reference to answer “what if” questions that naturally arise throughout the year. The report will be sufficient to support budget defenses and justifications that are frequently required by various stakeholders, including high-level DOE officials, ad-hoc teams such as the NRC, and the OMB.

The report will be similar to the EIA's Annual Energy Outlook report, but will focus on fossil energy technologies and issues of interest to the Office of Fossil Energy and the NETL. The report will go into much more detail than the AEO report on issues of importance to the FE/NETL. Because the AEO report covers every energy sector of the U.S., only a few pages of data and discussion can be provided for scenarios of primary importance to the FE/NETL. This report will build upon the AEO to provide detailed analyses of primary importance to the FE/NETL.

The report will be published annually a few months after the EIA releases their AEO report (usually in November or December each year) and will be titled “The Annual OSPS Forecast of Fossil Energy R&D Programs” or something similar.

The NETL organization is divided into Offices and Divisions mainly by technology type. The OSPS, on the other hand, is not devoted to a particular technology or program. Therefore, the OSPS is the logical place for a single team to evaluate all technologies and programs managed by the many divisions in the NETL organization. The NEMS forecasting team will consist primarily of OSPS staff members and support contractors.

We believe that NETL decision makers will eventually come to rely upon the OSPS annual report as a general reference to evaluate the impacts and benefits of technologies and the issues affecting their program area.

For now the team will focus only on the United States economy and Energy systems.

Why use NEMS?

- NEMS is by far the most complete and comprehensive model of the US Energy supply, conversion, and demand
- The FY05 budget for the FE had to be justified using NEMS forecasts. It is quite possible that our entire budget will be evaluated each year using NEMS
- NEMS is backed up by a staff of 40 to 50 full-time employees within the Energy Information Administration (EIA).
- NEMS is a public domain model
- NEMS is backed up by the EIA's unique data collection authority and staff (full-time staff of more than 100 staff dedicated to data collection and short term forecasting)
- For certain areas that NEMS does not model in the detail required, e.g., repowering existing plants, the team may use other models such as IPM or GEMSET.

Team members: Frank Shaffer, Patricia Rawls, Patrick Lee, Melissa Chan

Contractors: John Morano, Jay Ratafia-Brown

This team and its annual report will be a major project of the OSPS, and will take up most of the time of the team members. It will be a high priority task.

Much of the first year will be devoted to doing research and learning more about NEMS. One of the major tasks will be to study how hydrogen production transportation and consumption will be modeled in NEMS.

The annual report will be the main focus of the team. The frequent “firedrill” requests from Product Managers and other decision-makers will be discouraged. As the annual report develops it should eventually *anticipate* firedrill questions and address them ahead of time in the annual report.

PLAN

- choose team members
- develop a better understanding of NEMS
- choose technologies and issues to be covered in the first annual report
- collect data to describe technologies being developed by the NETL
- describe technologies in terms of input required by NEMS
- choose special issues for the first year
- study how issues are modeled in NEMS
- if not modeled in NEMS find alternate analysis method

- outline report
- divide up sections of the report
- developed draft report