

Developing a Project Management Office in the Department of Energy, Energy Information Administration

A Supplement to the report, *PMIAA: Strengthening the Government Delivery Foundation*.

The EIA PMO Mission:

To provide governance, resourcing, and communication processes for EIA Senior leadership to manage key IT and strategic projects, and to institutionalize a culture of project management at EIA.

Introduction

The U.S. Energy Information Administration (EIA) is a federal statistical agency within the Department of Energy that collects, analyzes, and disseminates independent and impartial energy information to promote sound policymaking, efficient markets, and public understanding of energy and its interaction with the economy and the environment.

A major reorganization in 2010 created new teams around functions and divisions of the energy sector within EIA. The reorganization also uncovered the need for increased matrixed project coordination. EIA's leadership considered establishing a Project Management Office (PMO) to develop, implement, and enforce a more rigorous project management governance framework to bring discipline and performance consistency to EIA projects and programs. Although this initial attempt to find the right solution did not achieve sustained success, this effort revealed that change management was also critical in developing project management maturity.

In 2015, an internal review identified shortfalls in IT project planning and performance. Large projects often exceeded budgets and were not being managed in a structured manner. Part of EIA's management response was to establish a PMO. This finding drove the impetus for change, resulting in a formal charter to create the PMO. But what would a "good" PMO look like for EIA? What could EIA realistically accomplish?

EIA developed a PMO Maturity Model that answered both questions by establishing a clear vision and roadmap for the PMO's development. The model defined a realistic pathway for the development of desired PMO capabilities that featured a staged approach for PMO implementation to manage organizational expectations and to sustain the necessary cultural changes. It also provided a benchmarking tool for measuring progress toward the vision for the PMO.

About DoE EIA

EIA is the nation's premier source of energy information and, by law, its data, analyses, and forecasts are independent of approval by any other officer or employee of the U.S. government. EIA conducts a wide range of data collection, analysis, forecasting, and dissemination activities to ensure that its customers, including

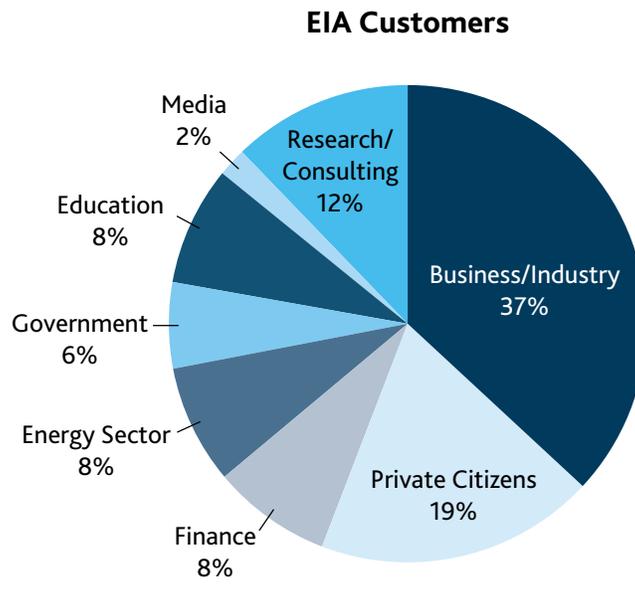


Figure 1. Customers of EIA information and products.

Congress, federal and state governments, the private sector, the public, and the media, have ready access to timely, reliable, and relevant energy information. EIA's data and analysis inform important energy-related decisions, including availability of energy sources; government, business, and personal investment decisions; and policy development.

EIA customers are wide-ranging and include government, the energy sector, businesses, industry, finance, consulting, media, educators, and private citizens (see Figure 1).

EIA's FY 2018 budget was \$125 million with authority to hire up to 375 federal employees. The Agency is organized into four main program areas:

- **Energy Data:** EIA's comprehensive energy data program conducts surveys of energy suppliers and consumers and then processes the data to produce a full range of publicly available reports. EIA provides this high-quality, relevant, timely data in a range of formats and structures to serve the various analytical needs of its customers.
- **Energy Analysis:** EIA conducts a robust energy analysis program to explain and interpret the changing energy marketplace. The program maintains and operates the National Energy Modeling System (NEMS), the nation's leading tool for developing long-term projections of U.S. energy production, consumption, prices, and technologies.
- **Communications:** EIA's communications program interacts with a diverse external customer base and manages the public website (www.eia.gov), press and media relations, marketing and outreach services, and the employee intranet.
- **Resource and Technology Management:** This function provides overall business management, analysis, and mission support to EIA and to requests from other components of DOE. Activities include workforce development and administration, financial and budget management, acquisition of support services, project management, and program evaluation.

The need for a PMO development model

EIA staff faced a significant challenge with identifying a suitable PMO framework that would fit the organization's strategic need. Recognizing the path forward as an evolutionary journey rather than a one-step implementation, EIA staff needed a pathway that defined the implementation steps and quantified the sustainment of transformational change. Such a framework would also help with:

1. Setting goals;
2. Managing stakeholder expectations regarding the amount of change; and
3. Quantifying the progress made.

EIA staff also understood they needed to tailor the approach to EIA's needs and objectives.

Authorized in April 2016, EIA's PMO provides project governance, resources, and communication processes. These processes help EIA senior leadership manage key IT and strategic projects and institutionalize a project management culture. The PMO establishes portfolio governance processes based on industry best practices and federal government/DOE standards. It supports EIA project managers by developing tools and templates for managing all phases of a project's life cycle. It provides comprehensive training and development capabilities. Most importantly, it monitors and reports on the most strategic projects for EIA senior leadership.

EIA projects and the PMO

The EIA project portfolio primarily consists of projects related to data collection, processing, modeling, and dissemination. In some cases, projects can last for over four years. EIA projects and programs are categorized into three tiers based on operational impact and project complexity, as shown in Figure 2. The tier definitions establish tailored project management process requirements and define the PMO's role in oversight, support, or simply serving as an information and mentoring resource. The PMO has a formal monitoring and oversight role with the Tier 1 enterprise projects, and provides governance standards and consultative support to Tier 2 business enhancement projects.

EIA PMO focuses on three pillars of service delivery:

1. Portfolio governance;
2. Training and development; and
3. Guidance and resources.

Portfolio governance provides oversight and control of the organization's project and program governance framework. Some key services include:

- Ongoing portfolio reviews of strategic projects for EIA senior leadership;
- Increased visibility of project performance to raise situational awareness and strengthen decision making;
- Improved business line support for project teams;
- Support for the EIA IT Governance Board;
- Standard processes to support successful project outcomes; and
- Alignment with Department of Energy and federal mandates.

Tier Level	Tier Definition	Common Attributes
Tier 1	Critical to mission success or strategic in nature	<ul style="list-style-type: none"> • High support services cost >\$1m • Cross-office collaboration • High impact to agency mission • High complexity or risk • Statutory requirement • EIA strategic priority • Senior leadership quarterly review • OMB Major IT investment
Tier 2	Business Enhancement	<ul style="list-style-type: none"> • Assistant Administrator oversight • Less cross-office collaboration • Business process improvement • Existing product expansion
Tier 3	Operational EIA Projects	<ul style="list-style-type: none"> • Office Director oversight • Low cost • Low complexity • Defined programmatic processes

Figure 2. EIA project/program categorization structure and aligned roles of the PMO.

The PMO's **training and development** activities provide an in-house resource offering developmental support to EIA project managers. This pillar delivers an effective mixture of training delivery methods to address the diverse learning needs and levels of competency across the organization. Some of the PMO training and development activities include:

- Hosting the EIA Project Management Community of Practice (CoP) for collaboration and networking;
- Promoting training, new methodologies, and industry best practices to achieve optimal project performance;
- Serving as a resource for candidates for the Federal Acquisition Certification (FAC-P/PM) and Project Management Institute's (PMI) Project Management Professional (PMP)[®] certifications;
- Mentoring and coaching; and
- Supporting project management career paths and competency development within EIA.

Aligned with the **guidance and resources** pillar, the PMO provides templates and tools required for managing the organization's projects and programs. It also provides subject matter expertise regarding project management topics, such as project performance baseline management and risk management.

The EIA PMO Maturity Model

EIA staff knew they had to demonstrate strong benefits to the organization associated with implementing the PMO. EIA produces energy data as a public good without any measurable financial value back to the organization, and its PMO focuses on improving the culture and performance of project management in the organization.

Thus, EIA staff recognized that measuring value delivery and benefits would be a challenge. They also knew that doing so would be essential to sustain and grow the PMO.

From its outset, the PMO established metrics to track value delivery. In FY 2016, the PMO established a baseline of seven basic metrics to monitor growth in project management practices and skill sets, including:

- The number of projects supported by the PMO;
- The number of unique monthly page views to its intranet portal demonstrating use of the PMO resources by staff;
- The number of news/blog posts about project management posted to its intranet;
- The number of standards, templates, and tools made available to project managers;
- The number of completed project lessons-learned evaluations archived;
- The number of EIA staff who received a PMO-sponsored training; and
- The number of PMPs in the organization.

The PMO tabulated the results of these quantitative metrics each quarter in FY 2017 and FY 2018. It also added three new metrics:

- The number of staff supported in pursuit of PMP or FAC-P/PM credentials;
- The number of project management community groups hosted via the EIA CoP.
- Average attendance at Community Group events.

In July 2017, the PMO utilized these baseline measures to design and develop a customized maturity model based on a study of industry best practices. The study referenced works such as: PMI® Thought Leadership Series, PMI's *Organizational Project Management Maturity Model (OPM3®)*, the Capability Maturity Model Integration (CMMI®), the work of Jeff Dowd, and the Balanced Scorecard.

EIA simplified the five stage CMMI® model to three broad levels of maturity—initiating, developing, and optimizing. Based on the work of Dowd and Kaplan with the Balanced Scorecard, EIA's model defined five broad areas of responsibility for the PMO. It also established three to six performance metrics within each area. EIA incorporated quantitative metrics into the model with targets for each level of maturity. The staff developed qualitative metrics with descriptive targets for each state of maturity. Finally, the team programmed a simple scoring system in Excel to provide the thresholds and to calculate the overall maturity levels based on the underlying metrics. The EIA PMO Maturity Model resulted.

The EIA PMO Maturity Model has three levels measuring its maturity across five lines of responsibility, all of which reflect EIA strategic capability requirements fulfilled by the PMO. Each area is characterized by a related set of expected outcomes, which are measured and assessed to determine the level of implementation maturity. Key characteristics of the model are:

- Formula-based scoring system (logic discerns tiers based on an average score assigned);
- Three levels of maturity (see Figure 3);
- Five categories of PMO responsibility;
- Three to six metrics per area of responsibility; and
- A mix of qualitative and quantitative targets.

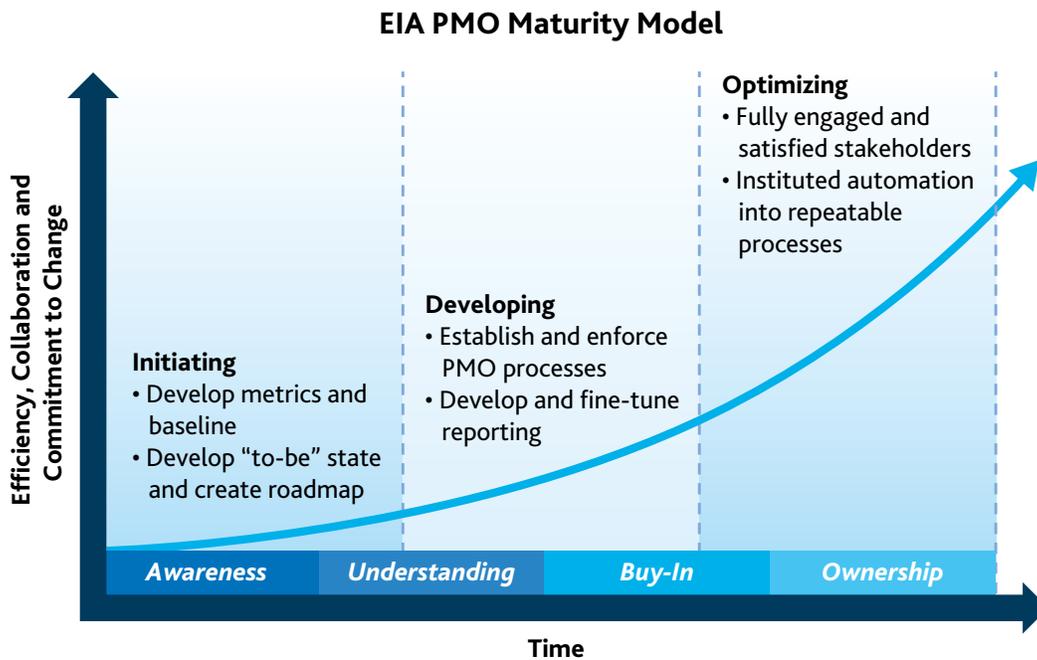


Figure 3. EIA PMO Maturity Model stages of maturity and key capability development characteristics.

The work associated with building and testing the maturity model represents *initiating* level of work.

Institutionalized PMO processes with effective, tailored reporting characterize the "developing" maturity level. At this level, the new capabilities become fully embedded as the "new way of working" and are fit for purpose.

Fully engaged and satisfied stakeholders along with the automation of standardized, repeatable processes define the "optimizing" maturity level. At this final stage, automation is applied where repeatable and institutionalized processes exist to improve process compliance, cycle-time optimization, and data quality. Process and practice data is captured and reviewed to identify organizational improvement opportunities as well as process effectiveness, compliance, and maintenance.

Five lines of responsibility represent the expected capabilities to be developed and implemented by the PMO. Each line of responsibility has associated assessment metrics to evaluate EIA's performance against expected outcomes. The five lines of responsibility and examples of assessment measures include:

- 1. Serve as EIA project management governing body**—effectively managing project schedule, ensuring processes and tools are adhered to, and ensuring that the project management life cycle is followed. *Metrics: monitor project schedules and budgets, manage change controls, re-baseline and corrective actions, and provide process guidance.*
- 2. Provide training and development pathways**—developing training roadmaps for interested staff, tracking training metrics, and providing coaching and mentoring. *Metrics: implementation of training programs, development of Federal Acquisition Certification for Program and Project Managers (FAC P/PM) capabilities, the number of PMP-certified staff, the number of participants who receive in-house trainings per fiscal year (including CoP events, the number of CoP events per year, and the number of coaching and mentoring pairings per year).*

3. **Provide templates and tools to facilitate managing the project life cycle**—Overseeing the development and distribution of project management templates and tools. *Metrics: the number of templates and tools available on EIA's intranet, development of project status reporting tools, design of the project close-out process, and development of a project team collaboration tool.*
4. **Strategic portfolio management**—Providing continuous oversight and reporting of Tier 1, 2, and 3 projects, ensuring delivery is on schedule and within budget, ensuring strategic alignment to EIA goals and objectives, providing project management subject matter expertise, and providing project management recommendations to senior EIA leadership. *Metrics: optimize the EIA PMO portfolio of projects (Tiers 1–3), control project management resources, and facilitate strategic portfolio reviews.*
5. **Ensure stakeholder coordination, engagement, and satisfaction**—Ensuring projects maintain open lines of communication and proper coordination across key project stakeholders, page views of intranet content, and increasing project manager and executive sponsor satisfaction with EIA PMO activities. *Metrics: coordinate with critical partners, percentage of project managers on PMO projects with PMO responsibilities in performance elements, average number of unique monthly PMO intranet page views, number of news posts to broader EIA audience per year (e.g., newsletters, posters, etc.), average number of CoP attendees per event, and overall results of an annual customer satisfaction survey.*

Table 1 shows a summary of the EIA PMO Maturity Model elements with a more detailed description of the maturity stages for each line of responsibility. The PMO is evaluating its maturity level with the model every six months. Areas without shading are those where the PMO advanced a maturity level from July 2017 to an assessment conducted in February 2018, and the boxes with text in italics are where the PMO maintained the same overall maturity level in that timeframe.

Sponsorship and organization

The EIA PMO enjoys strong support from its senior management. Steve Nalley was the Assistant Administrator for Resource and Technology Management (RTM) when he stood up the PMO and served as a senior champion. Bill Hishon directs the Office of Financial Management and Program Evaluation within RTM where the PMO was placed. Robert McManmon leads the EIA PMO and reports to Hishon. Since project and program performance are directly linked to senior executive performance objectives in EIA, both Steve and Bill have a direct interest in the success of the PMO. For 2018, this interest is reflected in the organization's return on investment metrics. Hishon noted that project timeliness and quality are important to support the requirements of the Government Performance Results Act (P.L. 103–62). He noted, "reporting, added rigor and accountability are useful in showing control on projects and adding value." The commitment for program and process excellence extends to the very top of the EIA organization and is a key reason for support from EIA senior leadership.

According to Nalley, EIA was ready for transformational change, which was more complex than simply developing a project management processes framework. The organization required a change in culture and a focus on project performance. Therefore, the PMO was challenged to not only develop and sustain a more effective methodology, but also to drive accountability and a disciplined approach to project management: "The time was right for change."

Although only a few projects have been completed since the PMO was established, EIA is experiencing a more effective portfolio selection process with a more realistic understanding of its capabilities. One noticeable difference is that EIA projects are applying more rigor to project management to improve the quality of project outputs and reduce post-project rework. Furthermore, following a recent portfolio review, the PMO is adding

Responsibilities	Description	Initiating	Developing	Optimizing
1. Serve as EIA project management governing body	Effectively managing project schedule; ensuring processes and tools are adhered to; ensure that project management life cycle is followed	Develop schedule and budget tracking processes; establish change control processes; provide ad-hoc guidance	Track schedules and monthly cost data; document, test, refine processes; develop full suite of guidelines	Automate spend plan and milestone tracking (EVM); efficient and repeatable change control processes; manage all guidance processes as needed
2. Provide training and development pathways	Develop training roadmaps for interested staff, track training metrics, and provide opportunities and support coaching and mentoring	Define EIA PM population; develop certification roadmap; stand-up coaching and mentoring program	Conduct training needs assessment providing baseline; identify training opportunities; begin supporting and mentoring pairs (5-10)	Deliver against identified needs assessment; support progression of cohorts through certifications; support consistent level of mentoring pairs each year
3. Provide templates and tools to facilitate the project life cycle	Oversee the development and distribution of project management templates and tool	Draft and set up document library; develop processes from charter to requirements to close out; define key reporting data and to-be processes	<i>Establish/manage template revisions; establish, test, refine and communicate project life cycle processes</i>	Efficient support of template needs; automation of lifecycle processes; real-time/automated project status reports
4. Strategic portfolio management	Provide continuous oversight and reporting of all tiered projects; ensure delivery on schedule and budget; ensure strategic alignment to EIA goals and objectives; provide PM subject matter expertise; recommendations	Implement project tiering; serve as supportive role to PMs; explore methods to capture strategic alignment to agency goals	<i>Communicate tiering process to stakeholders; establish and test portfolio review cycle; partially staff PMO with PMs and coordinators</i>	Manage formal project selection/ tiering process; oversee assignment of PMs and resources
5. Ensure stakeholder coordination, engagement, and satisfaction	Ensure projects maintain open lines of communication and proper coordination across stakeholders; increase engagement with Inside EIA content; and increase PM and sponsor satisfaction with EIA PMO activities	Identify critical partners; categorize key customers and develop satisfaction survey/tool; develop metrics to track Inside EIA posts engagement	<i>Establish regular partner committees and processes; implement, test/ improve satisfaction tool; begin engagement metrics tracking</i>	Implement consistent survey tool each year; use metrics to inform next steps for increasing engagement on EIA posts

Table 1. EIA PMO Maturity Model and assessment criteria. Areas with no shading depict areas of recent improvement. Areas with text in italics show the current state of EIA PMO maturity.

program management capabilities to its responsibilities and scope, and is implementing a process for standard stage gate reviews along the project life cycle.

According to McManmon, “The EIA PMO Maturity Model is a useful tool for showing our sponsors where we stood. It helped us focus our energies on areas of improvement, and also signaled where we were performing well.” The assessment helped the team place the focus on areas that would deliver high value, rather than incrementally improve performance.

Evidence of early value delivery is emerging at EIA. Prior to the PMO, one practitioner described the condition at EIA as the “age of heroes,” where project management practices were ad hoc and highly dependent on the skills of individuals who performed them. Today, the portfolio of projects under PMO oversight operates with the same set of terms, conditions, and understanding. As one practitioner stated, “just the agreement to common terms is beneficial.” This has been especially helpful in cross-office projects. Although some view the new rigor and processes as additional overhead, “cross-office communications are much better,” and when issues are detected, the PMO helps elevate and address them. Process tailoring is always a work in progress, even for highly mature organizations. An objective of project management aims to improve process effectiveness and efficiency. As in the organizational performance metrics for EIA, data quality is key.

EIA’s PMO has engaged its team in owning responsibility for effective project management. EIA has established a CoP with some successes. The self-managed community interest groups is a forum for project managers to present and share best practices on project management themes.

There are still many challenges ahead, but one of the strengths of the PMO Maturity Model is that as the PMO develops its maturity toward the third level (optimizing), it also develops its ability to deliver value, manage change, and improve its services. Having the team directly engaged in that objective is a key aspect of realizing and sustaining culture change.

Lessons learned and benefits

Nalley offered the following advice for others considering establishment of a PMO. “Start with a vision of the end state and be patient with a stated implementation. Take the temperature of the organization with respect to the amount of change. Have a game plan for about three years; chip away at the culture.” Hishon added that strong top-down support is imperative.

From the PMO perspective, McManmon emphasizes when building a PMO, one should “develop a roadmap plan as a starting point but also review and update the plan on a defined basis and be comfortable making changes to increase the PMO’s relevance and value delivery.”

Even though the EIA PMO is at the midpoint of its pathway to its target state, many benefits are being realized by the organization. According to McManmon, the organization is more confident in undertaking programs of higher complexity. Nalley adds that the organization performs its projects in a “less ad-hoc manner” and that the PMO is “building a healthier organization with better processes.” Hishon is “very pleased in the amount of accomplishments in the first two years” by the PMO team.

McManmon also noted, “The PMO scored itself using the maturity model two times with a six month interval, and found it to be a useful model in that it was easily repeatable, all of the metrics were still valid,

and performance improved across the board, suggesting that we were in fact using the model as a guide for incremental organizational maturity improvements.” Now, as the PMO begins to optimize some processes, it is being tasked with taking on additional program management responsibilities. The PMO team intends to add an additional area of responsibility to its maturity model to measure progress against plan in program management, in addition to project management.

Contacts for More Information

More information about EIA can be found at <https://www.eia.gov/>.

Further information regarding the development and implementation of OPM and the roles of maturity models can be found in PMI's *The Standard for Organizational Project Management*.

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Analysis – Implications for the Program Management Improvement and Accountability Act

This case study reflects an example of a government agency in the throes of improving its project/program management capabilities before passage of the Program Management Improvement and Accountability Act (P.L. 114-264). There are many more agencies in various stages of developing capabilities specific to their needs. Designated executive sponsors responsible for PMIAA implementation should explore how they can support these efforts to accelerate or amplify the positive effects aligned with PMIAA objectives. For example, the EIA PMO is strategically positioned to address PMIAA requirements, such as:

- Increased emphasis on planning and delivery of programs and projects.
- Better information on program and project management best practices.
- Alignment with established standards for effective project and program management.
- A formal agency career path for federal program managers utilizing government and third party credentials to validate practical knowledge and application experience.
- PMO guidance on implementation of government-wide policies.

Compliance with PMIAA presents opportunities and challenges for the EIA PMO. It also adds an element of validation to the development and application of the EIA PMO Maturity Model. OPM maturity models define recommended practices for managing an organization's projects, programs, and portfolios. Existing maturity models include global standards as well as tools that guide organizations during OPM implementation or improvement. The models also identify enabling capabilities that help implement and sustain OPM, such as organizational culture, structure, and technology. A PMO is an essential element of the enabling OPM infrastructure.

As an example, PMI's *Organizational Project Management Maturity Model (OPM3®)* - Third Edition recommends that an organization establish practices that demonstrate the following outcomes regarding PMO benchmarking:

- Define and document requirements for benchmarking the PMO capabilities, practices, and performance results in line with organizational objectives and strategy.
- Implement the PMO in accordance with the requirements.
- Evaluate PMO performance against these requirements.
- Improve the PMO structure and practices as required.
- Improve the organization's ability to benchmark PMO performance.

A PMO implementation is often viewed as a one-sided proposition to enforce project management process and governance for the organization. Hence, many PMO implementations have a short life span. In studies conducted by Project Management Institute, the average time to implement a PMO is about 24 months. The average life expectancy of a PMO is two to three years according to PMI's 2007 report, *The Multi-Project PMO: A Global Analysis of the Current State of Practice*. This indicates that a PMO without a long-term value objective or vision is typically disbanded shortly after it delivers required capabilities. Often, without continued support and diligence, organizations may not sustain the capabilities that they invested in building.

An effective PMO implementation demonstrates sustained value for both its sponsors and for the organizational operation that it serves. Additionally, since the operational environment often changes over the span of a PMO implementation, the implementation requires a level of organizational agility that higher PMO maturity enables. In other words, PMO implementations conducted as transformational programs tend to have a stronger focus on value sustainment.

EIA's PMO Maturity Model focuses on a clear strategic vision and benefits delivery to ensure sustained value for EIA. The Initiating maturity level establishes the necessary functions, processes and capabilities required by each line of responsibility. At this level, EIA has established the planned *to-be* future state of the PMO. This level includes the roadmap describing the new/improved capabilities (i.e., processes, technology, roles, and information/reports) required, as well as the planned transformation pathway to get there. EIA has measured and evaluated improvement against organizational project performance baselines established with buy-in from EIA leadership. The performance baselines establish the relationship among changes in outcomes and resulting benefits as new processes and capabilities are developed, implemented, and adopted by the organization. Many organizational change initiatives fail to effectively measure or realize benefits simply due to the lack of a baseline of the current state. As a result, EIA's focus on benefits realization associated with the change can be reliably measured, detected, or realized as EIA continues its assessment and improvement efforts. The ongoing maturity assessments also point to capability enhancements needed to help the PMO evolve to the next maturity level.