

2016-18 Executive Progress Report

Commonwealth of Virginia
Secretary of Commerce and Trade

Department of Mines, Minerals and Energy

At A Glance

It is the mission of the Department of Mines, Minerals and Energy (DMME) to enhance the development and conservation of energy and mineral resources in a safe and environmentally sound manner to support a more productive economy.

Staffing 204 Salaried Employees, 11 Contracted Employees, 233 Authorized, and 2 Wage Employees.

Financials Budget FY 2017, \$36.06 million, 36.02% from the General Fund.

Trends	➔ Coal production	Key Perf Areas	⬆ Injury rate on permitted sites
	➔ Natural gas production		➔ % of sites with no damage
	⬆ Minerals production	⬆ % of miners rating training effective	
	⬆ Renewable energy capacity	Productivity	⬆ Improving, ⬇ Worsening, ➔ Maintaining
	⬆ Alternate Fuel Vehicles		
Legend	⬆ Increase, ⬇ Decrease, ➔ Steady	Legend	

For more information on administrative key, and productivity measures, go to www.vaperforms.virginia.gov

Background and History

Agency Background Statement

The Department of Mines, Minerals and Energy (DMME) supports the safe and environmentally sound stewardship of Virginia's mineral and energy resources to promote economic growth. DMME provides for worker safety on coal and mineral mine sites throughout the Commonwealth. DMME also assists with worker safety on gas and oil extraction sites. DMME investigates complaints from citizens living near mining or gas and oil extraction sites, works to eliminate off-site environmental damages, and ensures proper reclamation of land used for mineral extraction.

Mineral resources have played a significant role in Virginia's growth and development since the settlement of Jamestown when English colonists began mining and smelting iron in 1609. The first commercial coal mining in the United States occurred near Richmond in 1748. Today, over 400 different minerals have been found and more than 30 different mineral resources are produced in Virginia at a combined annual value of nearly \$2 billion. In 2016, Virginia ranked 10th in the production of crushed stone and 16th in the production of natural gas. As of 2015, Virginia ranked 12th in coal production, despite a 7.6 percent decrease in production from 2014. Coal production has recently stabilized, due in part to changes in federal regulations, but long-term production levels are uncertain because of challenging market conditions.

DMME serves as Virginia's geologic survey, performing investigations aimed at reducing risk from geologic hazards and encouraging sustainable development through the wise use of mineral, land, water, and energy resources. DMME also publishes maps and reports, maintains repositories of geological and geophysical data, as well as rock, fossil, and core samples.

Housing the state's energy office, DMME advances energy efficiency in state government and the private sector. DMME staffs the Virginia Solar Energy Development and Energy Storage Authority, the Virginia Offshore Wind Development Authority, and administers grant and revolving loan programs to facilitate the growth of the renewable energy industry. Additionally, DMME works with stakeholders to promote economic development in the natural resource and energy sectors.

Major Products and Services

DMME offers a wide variety of products and services to its diverse customer base, which includes the following:

Safety and environmentally sound stewardship:

- DMME's permitting review services ensure mineral extraction operations are safe, protect the environment, and comply with existing laws and regulations.
- DMME's customer assistance services help customers maintain safe and environmentally protective mineral extraction sites in compliance with regulatory requirements.
- DMME conducts thorough and consistent inspection of permitted sites and enforces laws and regulations addressing worker safety on mineral extraction sites, operational and reclamation environmental controls, and water quality to ensure compliance.
- DMME provides worker certification and training, technical assistance, risk assessment, hazard identification, and cooperative projects, such as mine safety, environmental protection and land reclamation during mineral extraction.
- DMME's geologic and mineral resource information is available to effectively manage development of natural resources, such as coal, natural gas, crushed stone and industrial minerals, and geothermal energy.
- DMME works with industry, state and federal agencies and local governments to respond to and mitigate natural and manmade hazards related to mining, drilling, earthquakes, and landslides.
- DMME conducts reclamation of abandoned mineral extraction sites, corrects damage and mitigates risks of future damage from improperly reclaimed sites while supporting economic development.

Economic Development:

- DMME offers incentives and grant programs for energy industry development to increase jobs and economic activity in Virginia.
- DMME provides mineral resource information to businesses seeking to develop deposits such as precious metals, rare earth elements, industrial minerals, and aggregate.
- DMME prepares a comprehensive Virginia Energy Plan (VEP), which proposes actions consistent with the energy objectives and the Commonwealth Energy Policy including encouraging investment in innovative technologies and supporting programs that stimulate economic growth such as energy performance contracting and property assessed clean energy (PACE) financing.

Customers

Customer Summary

Coal production is expected to remain stable during this biennium due in part to decreased federal regulation; however, long-term production levels are uncertain due to market forces such as the historically low price of natural gas and falling price of wind and solar energy. As coal production and prices have stabilized mines in Southwest Virginia have recently reopened and several new mine licenses have been issued.

Natural gas production should remain relatively stable or increase slightly. The use of technologies such as horizontal drilling and hydraulic fracturing have produced record amounts of gas and many utilities are converting coal-fired power plants to natural gas. Historically low prices will also likely encourage increased retail consumption and new non-utility natural gas customers.

With respect to mineral mining, demand for minerals and construction aggregate will grow as the economy continues to recover. The Commonwealth's increased emphasis on funding new transportation projects, as well as a possible increase in federal infrastructure spending, may also help fuel the mineral mining industry's growth as it would increase the demand for gravel and other minerals.

Increasing global demand is driving up the prices of precious metals and energy-critical minerals such as lithium, cobalt, and rare earth elements. DMME offers readily available information about the occurrence of these resources in Virginia, which could facilitate the growth of new industries in the Commonwealth such as the emerging energy storage technologies discussed below.

DMME expects to see the number of government entities participating in demand response or energy performance contracting programs to remain stable or increase slightly. These programs offer participants incentives to curtail energy usage or install more energy efficient systems paid for by the savings those systems generate.

Virginia is experiencing rapid growth in solar energy projects and installations spurred by decreasing costs, increasing consumer demand, and recent solar legislation. In 2014, Virginia had 16.75 MW of installed solar. By 2016, that number had grown to 178.47 MW with the potential for over 900 MW installed by 2019. DMME provides staff support for the Virginia Solar Energy Development and Energy Storage Authority, which seeks to promote solar energy development.

DMME is also involved in other emerging energy technologies. The Virginia Solar Energy Development and Energy Storage Authority also seeks to position the Commonwealth as a leader in research, development, commercialization, manufacturing, and deployment of energy storage technology. Energy storage has been widely recognized as an impediment to a clean energy economy as intermittent solar and wind energy cannot currently be effectively or efficiently stored. Energy storage will also play a role in the ongoing development of electric vehicles. The agency is working with the Department of General Services to facilitate the conversion of the state vehicle fleet to alternative fuels. There are currently 278 alternative fuel vehicles in use by state and local government agencies. DMME is also monitoring efforts relating to legislation passed in 2017, which allows utilities to develop hydroelectric pumped storage facilities in abandoned coal mines.

Virginia is active in the development of offshore wind resources and an offshore energy resource supply chain. Virginia was the second east coast state selected for a commercial lease sale of submerged federal lands on the Outer Continental Shelf for the development of wind energy resources, which was a significant milestone achieved because of research, planning, and collaboration with multiple stakeholders. DMME provides staff support to the Virginia Offshore Wind Development Authority and is the holder of two offshore research leases from the U.S. Department of Interior's Bureau of Ocean Energy Management. The Virginia Offshore Wind Technology Advancement Project (VOWTAP), planned by Dominion for DMME's research lease, is currently being reevaluated after the loss of \$40 million in DOE funding. In 2015, DMME funded reports analyzing the port readiness and the availability of industrial resources in Virginia for offshore wind energy and oil and gas development.

Customer Table

Predefined Group	User Defined Group	Number Served Annually	Potential Number of Annual Customers	Projected Customer Trend
Employer/ Business Owner	Mineral extraction operators	350	350	Stable
Employee	Mineral extraction workers	9,000	9,000	Stable
Employer/ Business Owner	Affiliated mineral extraction business interests	2,800	2,800	Stable
Federal Agency	Other governmental agencies	10	10	Stable
State Agency(s),	Other governmental agencies	20	20	Stable
Local or Regional Government Authorities	Other governmental agencies	60	60	Stable
Resident	Public affected by mineral extraction operations	1,600,000	2,000,000	Stable

Finance and Performance Management

Finance

Financial Summary

DMME's funding derives from federal funds (**45.16%**), general fund appropriation (**32.56%**), permit and license fees paid by mineral extraction operators (**8.46%**), bond forfeiture proceeds (**5.25%**), indirect cost recovery revenue (**3.33%**), biofuels production (**1.88%**) and miscellaneous sources such as state designated mine rescue team dues, civil penalty payments, and orphaned mineral mine or well reclamation or plugging revenues (**3.36%**) for FY 2017.

Fund Sources

Fund Code	Fund Name	FY 2017	FY 2018
0100	General Fund	\$12,987,375	\$12,731,255
0200	Special	\$162,978	\$162,978
0214	Forfeited Bond Funds	\$2,165,000	\$2,165,000
0218	Permit Fees Fund	\$3,490,439	\$3,490,439
0247	Mine Rescue Fund	\$155,000	\$155,000
0280	Appropriated Indirect Cost Recoveries	\$1,375,729	\$1,375,729
0726	Abandoned Mined Land Special Trust Fund	\$525,000	\$525,000
0950	Minerals Other Than Coal Abandon Lands Reclamation	\$120,000	\$120,000
0952	Orphaned Well Fund	\$53,000	\$53,000
0960	Coal Pool Bond Administration Fund	\$41,700	\$41,700
0963	Conservation & Recreation	\$250,000	\$250,000
1000	Federal Trust	\$14,729,200	\$14,698,519

Revenue Summary

DMME's reported revenues are derived from ARRA related grants (6%), other federal grants (70%), indirect cost recoveries (4%), license and permit fees (14%), and other miscellaneous sources, such as civil penalty payments and orphaned mineral mine or well reclamation funds (6%).

Performance

Performance Highlights

DMME continues to meet or exceed targets in its department-wide measures. Agency metrics for safety, environmental protection, and worker training all reflect high-quality performance.

Adjusting to ongoing staff and budget reductions, relevant performance measures continue to reflect DMME's emphasis on efficient, effective core services, and continuous quality improvement. Injury rates are stable, permits continue to be processed in a timely fashion, and customers consistently rate training provided by DMME as excellent. Productivity and efficiency gains enhance service delivery and support adjustments in staff and resources.

Selected Measures

Measure ID	Measure	Alternative Name	Estimated Trend
40900000.001.003	Average annual cost of keeping one mineral extraction worker safe.	Avg. safety cost for 1 worker	Maintaining
40900000.001.001	Number of serious injuries and fatalities at mineral and fossil fuel extraction sites per 200,000 worker hours.	Injury rate on permitted sites	Improving
40900000.002.001	Percentage of permitted mineral and fossil fuel extraction sites with no adverse off-site environmental damage or public safety hazards.	% of sites with no damage	Maintaining
409.0002	Percentage of miners rating safety training provided by the Department of Mines, Minerals and Energy as very effective.	% of miners rating training effective	Improving
409.0001	Cumulative net present value of energy conservation savings to the Commonwealth from the energy performance contracting program.		Improving

Key Risk Factors

DMME Workforce

Reflecting the overall aging of America's workforce, DMME is facing the need to replace a significant proportion of its workforce in the next five years. A number of employees have left the agency in recent years and more will be eligible for retirement in the coming biennium. Specifically, 47 percent of employees are eligible to retire with more than 30 years of service. This change in workforce requires DMME to transfer a tremendous amount of the institutional knowledge, which helps the agency understand and address the challenges of providing high quality customer service in the worker safety, environmental protection, geology, and energy conservation arenas to new employees. Recruitment and retention are made more difficult as regulated industries continue to offer high wages and other incentives to deal with similar labor shortages. DMME has proactively updated its transition plans and task descriptions across the agency to prepare for these changes.

The Future of Coal

Given the increased pressures from cheaper fuels such as natural gas and global economic trends the future of coal is an uncertain one. Recently, coal prices have stabilized due in part to changes in federal policies. Idled mines have reopened and new permits have been issued. The economy in Southwest Virginia is tremendously impacted by changes in the coal industry, with ripple effects felt throughout the Commonwealth, which makes long-term economic diversification vital.

Uncertainty of Federal Policies and Funding

The new federal administration has increased uncertainty regarding federal policies and funding. While it is clear the administration intends, and has already taken action, to decrease federal regulations relating to mining, it is unclear the long-term impacts this will have on production and economic activity including job growth. The federal administration has also signaled it may decrease federal funds to states for certain programs, which could impact DMME including certain federally funded positions as well as services funded by the Mine Safety and Health Administration (MSHA) and the Department of Energy. In FY2017, 40.85 percent of DMME's funding is budgeted from federal sources. DMME is including strategies for flexibly handling changes in federal funding and policies in the agency's strategic plan.

Agency Statistics

Statistics Summary

These statistics reflect the breadth of DMME's responsibilities with respect to inspection of permitted sites. They also reflect the growth of the agency's energy performance contracting program and the wide variety of geologic and mineral resource material available. All statistics are current as of June 30, 2016.

Statistics Table

Description	Value
Number of permitted coal mine sites	250
Number of permitted mineral mine sites	443
Number of permitted gas and oil sites	10,904
Number of coal mine safety inspection hours for fiscal year 2014	11,772
Number of state agencies/public bodies utilizing performance contracting administered by DMME	118
Number of geologic and mineral resource publications available on DMME's website	1,340

Management Discussion

General Information About Ongoing Status of Agency

DMME continues to focus on its core services in order to fulfill its mission to enhance the development and conservation of mineral and energy resources in a safe and environmentally sound manner in order to support a more productive economy. DMME utilizes its robust strategic planning process, long an agency strength, to identify efficiencies, generate new opportunities, and prepare for the future in challenging economic times.

As a matter of course, DMME identifies existing processes that can be improved, thus providing increased benefits to its customers.

In fiscal year 2017 and beyond, DMME anticipates coal mining and natural gas drilling to continue to occur in close proximity in Southwest Virginia. DMME's regulatory divisions will continue to work closely together to ensure both activities are conducted in a safe and environmentally responsible fashion. DMME will continue to search for more innovative and efficient methods to provide training and certification services to its customers.

Technological advancements will be utilized across the agency. For example, geographic information systems and global positioning satellite systems will be utilized to ensure pinpoint accuracy of mineral data on permits, maps, and mineral resource information. DMME is also utilizing drone technology to more easily map abandoned mine land hazards, which is available to inspectors on a smartphone application. DMME Geographic Information Supervisor Daniel Kestner received the Dean Spindler Reclamationist of the Year Award for 2016 from the National Association of State Land Reclamationists (NASLR) for these efforts.

DMME is partnering with the federal Bureau of Ocean Energy Management (BOEM) and the state geological surveys of other Atlantic states to identify new sources of sand in federal waters off the east coast. Known as the Atlantic Sand Assessment Project (ASAP), the initiative aims to assess the quality and volume of sand resources that can be used in future shoreline recovery and resiliency efforts. In the recent past, offshore sand resources have been essential to the maintenance of beaches at Wallops Island, Dam Neck, Sandbridge, and Virginia Beach.

With respect to energy, DMME will deliver an updated Virginia Energy Plan to the Governor and General Assembly no later than October, 2018. DMME will play an important role in the growth of the emerging energy technology industries by providing staff support to the Virginia Solar Energy Development and Energy Storage Authority and Virginia Offshore Wind Development Authority. DMME will also continue to manage the Virginia Energy Management Program (VEMP), providing participating government entities with the tools to conserve and reduce energy usage and provide cost certainty via long-term bulk fuel purchase contracts. Additionally, DMME is taking the lead among southeastern states in developing a publicly accessible database of the region's geothermal energy resources. Finally, DMME will partner with the Department of General Services to convert the state vehicle fleet to alternative fuels.

Information Technology

All users and hardware follow existing Virginia Information Technologies Agency/Northrop Grumman (VITA/NG) standards or new partnership agreements that are being made. Hardware upgrades and operating system updates have required vast amounts of DMME staff time. A number of the agency's custom applications required rewrites to make them compatible with Windows 10 and Office 2016.

DMME has developed custom software and extensive business applications for its office and field staff. This software has provided advanced capabilities in mapping, enforcement tools, and web services. DMME has implemented web-based services for the majority of our industry customers. These nationally recognized innovations have positively impacted service delivery and customer satisfaction. The award-winning DMME electronic permitting system in its Coal Environmental Protection and Land Reclamation service area has been expanded to provide complete web-based functionality to industry customers for each regulatory group at DMME. A number of mapping web services are already in place and additional ones will be made available to support the wide variety of needs of DMME's mapping customers. These maps will serve as an expanding resource for industry customers in meeting safety and reclamation requirements.

IT costs present challenges for DMME as funding becomes more competitive. The development of new and innovative services must be balanced with long term maintenance of current systems. Customers continue to express a high demand for electronic government services and information. DMME is committed to continuously reducing costs while maintaining effective computer system software that meet customer needs.

Server and workstation upgrades will continue over the next two years, with the focus on cost reduction and future needs. Years of software development are being re-engineered to work more efficiently while maintaining the high standards of service for which DMME is known. To continue to meet these standards, DMME's web-based services will be expanded during the coming biennium to provide the additional services necessary to meet the needs of our customers.

Workforce Development

DMME currently has 236 FTE (full-time equivalent) positions, with 204 filled. DMME's FTE number has ranged from a high of 298 to a low of 233.

As detailed earlier in this report, DMME is facing the need to replace a significant proportion of its workforce in the next five years. Of the existing workforce, 47 percent are eligible to retire in five years or less with more than 30 years of service. This change in workforce creates a need to transfer a tremendous amount of institutional knowledge to new employees. DMME has proactively updated its transition plans across the agency to prepare for these changes.

Physical Plant

DMME maintains four offices across Virginia, one of which it owns (Big Stone Gap) and three that are leased (Richmond, Charlottesville and Lebanon). The largest of these facilities is the Buchanan-Smith Building in Big Stone Gap. This facility includes 25,827 square feet of office space, for 100 staff members, two active file areas, and a customer assistance center, and the agency's garage of 6,000 square feet that maintains most of the agency's 129 vehicles. Storage space in the building is at a premium. Efforts to store files electronically are ongoing.

The Buchanan-Smith Building was completed and occupied in 1992 and has maintenance needs typical of a twenty five year old building. Recently DMME entered into an energy performance contract with Trane to upgrade all lighting in the building, garage facility, and all outside lighting to LEDs. The performance contract also included the replacement of the facility's chiller, and one of the coal fired boilers with a modern propane boiler to be used in transition periods to increase energy efficiency. The building's current needs include replacement of its roof, maintenance to asphalt surface, and painting.

DMME's Richmond office is located in the Washington Building on Capitol Square and houses 19 staff members. DMME has leased this space from the Department of General Services since 2009.

DMME's offices in Charlottesville are located in the Department of Forestry's building in the Fontaine Research Park. DMME moved into this building in 1994. In an agreement established prior to construction, DMME does not pay rent for this space. The facility features office space for 32 staff members, a research laboratory, a large library, and a customer assistance area.

In 2009, DMME entered into a 20 year lease with the Russell County Industrial Development Authority (RCIDA) for office space located in the Russell County Government Center in Lebanon. This facility features office space for 20 staff members, 24 workstations shared among 40 field inspectors, and a customer assistance area. DMME has been working with RCIDA to enhance security at the facility. Storage issues are being addressed at this facility as well. The recent boom in natural gas drilling has created a need to store hundreds of thousands of pages of data. Efforts to store this legally required data electronically are ongoing.
