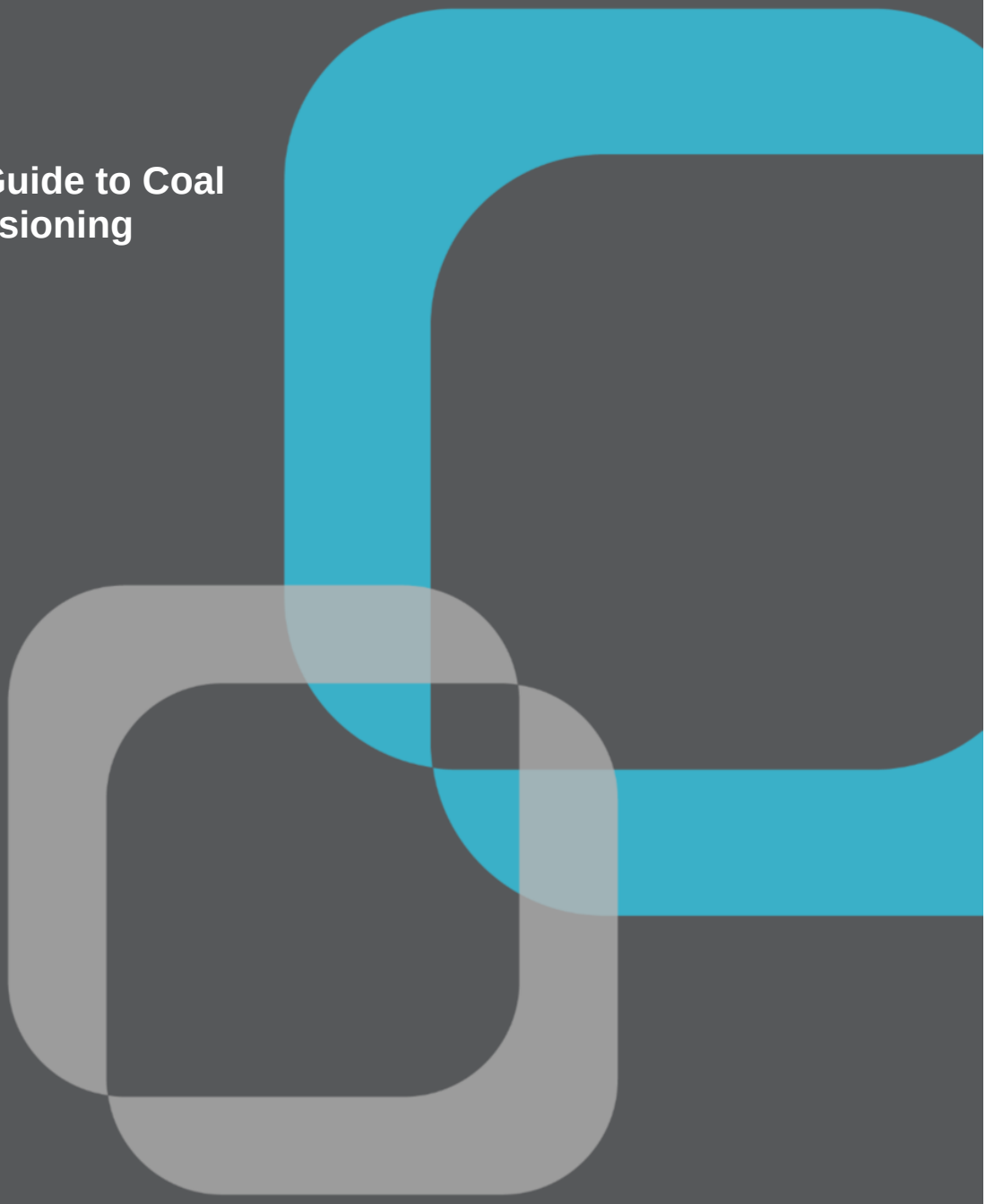
Management's Guide to Coal Plant Decommissioning

April 2016



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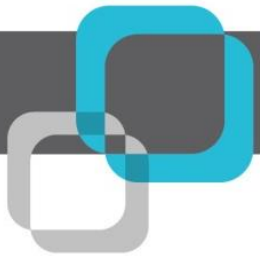


A large number of coal plants are expected to retire within the next five years. Generation companies that operate coal-fired facilities must carefully make and execute the decommissioning decision to ensure more than just financial prudence. The human element of retiring an older coal plant requires careful consideration and execution to ensure employees are treated fairly, regulators are provided adequate notice, and the company's public perception is not harmed. In this article, ScottMadden explores the drivers of coal plant closures and recommends the approach generation companies should use to ensure equity and management control throughout the decommissioning process.

OVERVIEW

The United States is entering a new era of electric generation. Coal, once the dominant fuel of choice in U.S. generation, has recently been decreasing in popularity. In 2015, natural gas and coal both supplied just over one-third of U.S. generation[1]. However, the Energy Information Administration (EIA) predicts that natural gas could surpass coal as a percentage of total U.S. production by the end of 2016.

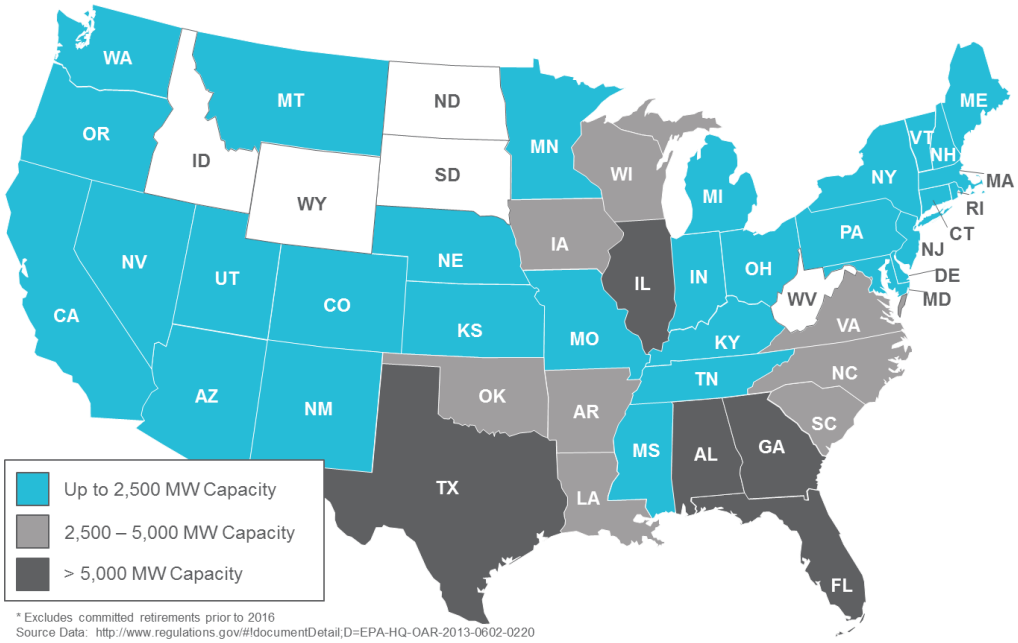
As a result of the directional change to cleaner energy (like natural gas), it is estimated that a minimum of 40GW of coal-fired capacity, nearly 15% of the country's existing coal-fired capacity, will be retired by 2020[2]. However, if the Environmental Protection Agency's (EPA) Clean Power Plan (CPP) is upheld by the U.S. Supreme Court, the EIA has projected that an additional 50GW of coal-fired capacity will be retired by 2040[3].

[1] EIA: Natural Gas Expected to Surpass Coal in Mix of Fuel Used for U.S. Power Generation in 2016, http://www.eia.gov/todayinenergy/detail.cfm?id=25392

[2] EIA: Annual Energy Outlook 2015 with projections to 2040, http://www.eia.gov/forecasts/aeo/

[3] EIA: Proposed Clean Power Plan would accelerate renewable additions and coal plant retirements https://www.eia.gov/todayinenergy/detail.cfm?id=21532

Exhibit A: EPA-Projected Coal Capacity Retirements under 111d Proposal* (CPP) between 2016 and 2020[4]



There are five primary reasons why generation companies are reassessing the future of their coal-fired assets.

1. **Environmental Compliance Costs:** Compliance with regulations such as the Cross-State Air Pollution Rule, the Cooling Water Intake Rule (316b), the Coal Combustion Residual Rule, and the proposed CPP will significantly increase the cost of operating a coal-fired plant. While it is difficult to project the actual costs for individual operators to become compliant with these new regulations, the EPA has estimated that the annual compliance costs for the CPP will be approximately $8.4 billion.[5] Industry and business groups have argued the cost estimates provided by the EPA are far too conservative and project the costs of compliance to be higher by several multiples.

2. **Natural Gas Prices:** The abundant supply of domestic natural gas reserves has reduced the cost of the fuel, making it more attractive for use in electricity generation. By 2040, natural gas-fired generation is projected to comprise approximately 31% of the power generated in the U.S., rivaling coal as the largest single contributor.[6]

3. **Cost Competitiveness of Renewables:** Renewable energy is rapidly becoming a more cost-competitive source of generation, benefiting from technological advances, state renewable portfolio standards and related policies, and (in the case of wind and solar) favorable tax treatment.

[4] Southern Stations Energy Board, http://www.sseb.org/wp-content/uploads/2010/05/Retirements-under-111d-8_14.pdf
[5] EPA: Clean Power Plan Fact Sheet, http://www.epa.gov/sites/production/files/2015-08/documents/fs-cpp-by-the-numbers.pdf
[6] EIA: Annual Energy Outlook 2015 with projections to 2040, http://www.eia.gov/forecasts/aeo/

4. **Aging Units:** The majority of U.S. coal capacity was built between 1970 and 1990. The average age of all operating coal units is currently 42 years, and 86% are more than 25 years old. These units are fully depreciated, facilitating the retirement decision.

5. **Public Perception of Coal:** The public perception of coal-fired generation has become more negative over time. The process of burning coal to generate electricity has increasingly been targeted by a wide range of groups that argue the practice is one of the primary causes of climate change and other public health problems, particularly respiratory ailments like asthma.

Executives who are choosing to decommission a coal-fired generation plant have a number of decisions to make—from the desired end-state of the plant to the approach and timing of the decommissioning process. Generation companies that have executed this process well in the past utilized a comprehensive planning process that ensured there was a well-thought-out plan in place and that it involved the right people at the right time. Typically, the financial decisions are the easy part. It is the people side of the process that can be trickier and may require a more thoughtful approach to ensure overall success.

This article recommends a three-phase process for planning a successful plant decommissioning. It is based on ScottMadden's experience helping a variety of generators with their decommissioning projects. Our experience has shown that a comprehensive and well-thought-out execution plan proves to be better for financial, human capital, and operational outcomes (for the remainder of the plant's life) for the generation company. The plan should encompass the timespan from prior to the public announcement of the closure through the desired end-state of the plant. While the plan should be tailored to the specific needs of the plant and allow for some flexibility, ScottMadden recommends a three-phase process: Project Set-up, Design and Detailed Planning, and Plan Execution.

Exhibit B: Phases of a Successful Plant Closure

	Phase 1: Project Set-up	Phase 2: Design and Detailed Planning	Phase 3: Plan Execution
Key Activities	▪ Develop project charter for decommissioning effort ▪ Establish desired end-state of facility ▪ Establish small cross-functional teams to initiate planning ▪ Conduct initial planning activities	▪ Develop detailed execution plans for functional areas ▪ Define work stream interdependencies ▪ Develop project metrics/success factors ▪ Involve additional resources required that were not included in Phase 1	▪ Implement execution plan ▪ Monitor metrics/success factors ▪ Follow a structured project management process
Participants	▪ Senior leadership ▪ Handful of subject matter experts	▪ PMO ▪ Leaders of impacted organizations (e.g., HR, Finance, etc.)	▪ PMO ▪ Project team
Transition Event	▪ Management approval of closure*	▪ Board approval* ▪ Public announcement of closure	▪ Plant shutdown
Nature of Work	▪ Highly confidential	▪ Highly confidential	▪ Public

*Note: Depending on the situation, the timing of management and board approval may vary

Phase 1: Project Set-up

Upon deciding to close a coal-fired power plant, it is vital that management quickly engage in a comprehensive planning process prior to the public announcement of the closure. The first step is to develop a project charter for the effort that defines the scope, timing, roles/ accountabilities, and milestones for the decommissioning project. There are two primary work streams: the human element and the market element. The human element includes many considerations, such as the announcement method, message content and timing, plan for staffing to shutdown, Worker Adjustment and Retraining (WARN) Act notice period and state notifications (if applicable), and multiple other details. The market element includes elements like economic decisions and alternatives for the final state of the unit (e.g., mothballing the asset, decommissioning, returning the site to brown/greenfield for future development, etc.), proper accounting, market/ RTO notification, salvage opportunities, environmental requirements, etc. Effective generation owners employ a project management approach to surface, research, and make decisions based on the company's unique situation.

Importance of the Human Element

ScottMadden's experience has shown that generation companies are focused on operations and markets—they are often less prepared when it comes to the human element. However, given the impact the decommissioning process has on the lives of plant personnel and the local community (of which a plant is typically a major employer and driver of significant economic activity), significant time and effort should be invested in addressing the human element of the closure.

Once the scope has been defined, the next step is to develop small cross-functional teams to plan the details for the closure. These teams should include individuals with expertise from areas across the enterprise including HR, Plant Operations/Maintenance, Finance, Accounting, Legal, Regulatory, Communications, etc. When establishing these teams, it is vital that senior leadership communicates the importance and confidentiality of the plant closing initiatives and that the team should not share any information until instructed to do so by the executive sponsor.

Next, the teams should engage in initial planning activities which include identifying major issues relating to the closure and developing individual work plans to address these issues. The work of the teams should be broad spectrum and include: developing materials that communicate the closure of the plant; providing adequate information and resources to internal and external stakeholders; establishing strategies to ensure the operational continuity for the remainder of the plant's operating life; developing processes for engaging in reduction-of-force activities; and identifying/engaging third-party contractors to assist in the demolition/deconstruction of the facility (if the decision is to demolish the site).

ScottMadden strongly recommends that the initial planning process takes place prior to the closure announcement. A plant closure will have wide-ranging impacts on both individuals and the community. Each impact should be identified and assessed prior to publicly announcing the closure, as each will need to be messaged appropriately. For example, ScottMadden worked with one owner to plan the closure of a plant that was the largest employer in the community. Management made the decision to work proactively with the political leadership of the impacted area to address their specific concerns, including jobs and impacts to property taxes. While engaging in Phase 1 activities will not eliminate all potential problems, having teams from across the enterprise who are thinking through these impacts, and actively engaging in the planning process prior to the announcement, can ultimately result in a smoother plant closure.

Phase 2: Design and Detailed Planning

Where Phase 1 was focused on the big picture and issue identification, Phase 2 focuses on designing and developing detailed execution plans for key functional areas (e.g., Communications, HR, Finance, and Regulatory) and significant stakeholder groups (e.g., state commissions, RTOs, political leaders, community groups, etc.). As part of the process, it is imperative to identify and plan for interdependencies. As a result of the expanded work associated with Design and Detailed Planning (Phase 2) and Plan Execution (Phase 3), we recommend additional resources be added to the small Phase 1 project teams. During this phase, decommissioning project work occurs separately, but in parallel, with day-to-day operations. To highlight activities during this stage, below is an example of the key elements associated with the Communications function.

CASE STUDY: COMMUNICATIONS

A comprehensive communications strategy is vital to a successful decommissioning plan. Utilities need to be cognizant of how a plant closure will impact various stakeholder groups, both internal and external, and the importance of maintaining an ongoing dialogue with each group.

Current employees are the most immediately impacted group and, consequently, will want to know the plant closure strategy and timeline and what is going to happen to their jobs. There are significant downsides to poorly managed communications with employees—vague, incomplete communication drives rumors and lowers morale. Also, disengaged and disenfranchised employees are more likely to have work accidents. Moreover, employment uncertainty may encourage workers to seek employment elsewhere, risking the loss of essential skills to the utility. Direct management engagement with employees is important to convey the appropriate level of respect and care when announcing plant closures and explaining the subsequent activities. The closure announcement should come from management in a face-to-face setting at each facility (multiple sites simultaneously, if applicable).

ScottMadden recommends establishing a communications infrastructure that includes an employee hotline, website, and social media presence for employees to submit questions or concerns, as well as obtain updated information from the company after the initial announcement. The hotline and social media presence should be monitored by HR with quick response times (less than 60 minutes) during the first month following the announcement and then regularly until all the units are retired. Additionally, a “resource center” managed by HR and supplemented with career counselors should be established to assist employees with questions, pursuit of job opportunities, and general communications in a friendly face-to-face environment.

Many coal plants being considered for closure have been in operation for decades and often represent a legacy of employment to a local community. It is not uncommon for a local economy to be centered on a single plant. In such situations, plant closures can have major socioeconomic impacts. It is likely that the plant shutdown will be felt not just by current plant employees and their families but throughout the entire community. Due to the impact of the shutdown, it is essential that the communications plan addresses issues that will inevitably be raised by local units of government, local businesses, and individual community members.

Once communications have been made to internal stakeholders, follow-on announcements should be made to external stakeholder groups, including trade partners (e.g., suppliers, financial institutions, industry publications, etc.), regulatory bodies, and political offices at the community, state, regional and federal level, etc. It is critical that a complete set of pre-announcement documents are developed well in advance of the initial closure announcement. Following the physical and digital release of the announcement, representatives should be available to address questions from any external stakeholders, relying on predetermined, and focused messaging. A structured process and timeline helps to ensure consistent messaging with an emphasis on milestone achievement.

Phase 3: Plan Execution

The Plan Execution phase takes the project team beyond the initial announcement into a structured project management process. This provides the necessary structure to fulfill the defined project scope and timing objectives while not compromising ongoing generation activities (assuming the plant will remain in operation for some period of time post-closure announcement). Safe and efficient operations are still the top priority at generating stations during the decommissioning process. Major milestones should be tracked and reported to key stakeholders to ensure progress is in line with expectations.

Decommissioning a generating asset is expensive and can become untenable if planning is poor and lacks executional rigor. The key to controlling costs is to strategically control the decommissioning process. The planning process should involve a thorough evaluation of all options and scenarios and include success metrics and milestones. Project leads should develop robust decommissioning plans that allow for reassessment of options in case of significant changes in legislation, the operating environment (demand), and/or operating costs. Once the unit has been decommissioned, Phase 3 ends. That said, additional work is required in many areas, including deconstruction, environmental remediation, sale of assets, and the potential transfer of property to a third party. Again, it is essential that management fully plan post-operation activities to ensure success.

SCOTTMADDEN'S APPROACH AND EXPERIENCE

ScottMadden has assisted multiple generation companies to effectively analyze, plan, and execute plant decommissioning projects. We approach decommissioning work with a deep respect for the stakeholders and leverage professional and specific experience to support your initiatives. Our experience includes:

- Decommissioning analysis and strategy
- Project management office
- Organizational redesign
- Reduction in force analysis and implementation
- Vendor selection of demolition/deconstruction contractors
- Development of coal-ash disposal strategy and execution

Learn more about how ScottMadden can assist you with plant decommissioning and other fossil generation initiatives here.

ABOUT SCOTTMADDEN'S ENERGY PRACTICE

We know energy from the ground up. Since 1983, we have been energy consultants. We have served more than 300 clients, including 20 of the top 20 energy utilities. We have performed more than 2,400 projects across every energy utility business unit and every function. We have helped our clients develop strategies, improve operations, reorganize companies, and implement initiatives. Our broad and deep energy utility expertise is not theoretical—it is experience based.

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