## **BOOK REVIEW**

ENERGY AFTERMATH by Thomas B. Lee, Ben C. Ball, Jr. and Richard D. Tabors, Harvard Business School Press, 1990.

## Reviewed by William A. Mogel\*

*Energy Aftermath* is like Chinese food: it leaves you hungry after piling high your plate. Written by three well qualified authors, *Energy Aftermath* promises to examine the blunders of the past and formulate what "will be the structure of energy systems in the twenty-first century."<sup>1</sup> At least with regard to the future, this formidable task is not achieved. The authors have concluded:

We are keenly aware that there is no single correct solution for an energy policy. Nor have we attempted to identify  $one^2$ 

*Energy Aftermath* is divided into three major sections: blunders, lessons and prospects for the future. The pivotal event around which *Energy Aftermath* focuses is the OPEC oil embargo in late 1973. The authors observe:

The real cause of the new era was the loss of control over oil production, rates and prices by the international oil companies to the governments of the exporting countries.<sup>3</sup>

This observation is preceded by the conclusion that, "OPEC could require U.S. companies to serve OPEC's foreign policy!"

One of the better parts of *Energy Aftermath* is that it effectively debunks certain myths, such as:

[T]he demand for energy would continue to grow; Energy prices, especially the price of oil, would continue to increase until a backstop technology . . . became available; and We [are] running out of oil.<sup>4</sup>

Although *Energy Aftermath* is addicted to making undocumented pronouncements, one, even though previously articulated by one of the authors, is particularly thought provoking:

People don't use energy - capital does.<sup>5</sup>

Energy Aftermath explains:

Big changes come mostly from replacing energy-using capital equipment and machinery with more energy-efficient equipment. New houses are built with more insulation; a Boeing 757 gets more air passenger miles per gallon of jet fuel;

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<sup>1.</sup> T.B. LEE, B.C. BALL, JR. & R.D. TABORS, ENERGY AFTERMATH, at 8 (1990).

<sup>2.</sup> Id. at 251.

<sup>3.</sup> Id. at 31.

<sup>4.</sup> Id. at 39.

<sup>5.</sup> Id. at 43.

recuperators are added to boilers. But all that takes time. A nation's fleet of gasguzzlers is not replaced with economy cars overnight just because gasoline prices increase. We wait until it's time to replace the old car; then, when we are ready, we buy one that gets higher mileage.<sup>6</sup>

*Energy Aftermath* is not a balanced discussion of all the non-renewable energy industries. Its focus almost is exclusively on oil, with only six pages (out of 266) devoted to natural gas. Throughout, there are brief discussions of electric and nuclear power, and only passing references to environmental issues.<sup>7</sup> Renewable sources of energy such as solar and biomass are not discussed.

*Energy Aftermath* devotes considerable space to Delphic-like pronouncements, such as:

The market for gas from the late 1940s to the late 1960s required only minimal thought and planning.<sup>8</sup>

Energy . . . is inexorably bound to technology.<sup>9</sup>

[DOE looks] like a creature that has out-lived its usefulness.<sup>10</sup>

Price behavior during the last fifteen years has been the antiopode<sup>11</sup> of trends, and confounded our ability to forecast.<sup>12</sup>

The public sector had no monopoly on dysfunctional decisions in energy system planning. The private sector shared equally in its inability to accept the reality of fundamental changes in the energy economy and to understand the insidious power of faulty assumptions.<sup>13</sup> and

Most forecasts are wrong, therefore, robustness is a critical planning requirement.<sup>14</sup>

In sum, *Energy Aftermath* has taken on a significant challenge. Its examination of the oil industry raises interesting issues, and confirms that this indispensable industry is complex, vital and ever-changing.

13. Id. at 93.

<sup>6.</sup> Id. at 44.

<sup>7.</sup> Id. at 143-146.

<sup>8.</sup> Id. at 79.

<sup>9.</sup> Id. at 161.

<sup>10.</sup> Id. at 2.

<sup>11.</sup> Antipode means "anything diametrically opposite; exact opposite." WEBSTER'S NEW WORLD DICTIONARY (2d C. ed. 1984).

<sup>12.</sup> T.B. LEE, B.C. BALL, JR. & R.D. TABORS, ENERGY AFTERMATH, at 47 (1990).

<sup>14.</sup> Id. at 192.