

### 3. COMMERCIAL PROGRESS OF ERIP INVENTIONS

Each year, new ERIP technologies are introduced into the market while others are withdrawn. New licensing agreements are signed, while others expire or are terminated. Many ERIP inventions progress steadily through sequential stages of development, some fail and are shelved, while others cycle through repeated stages of technical development in response to market and user feedback.

This chapter assesses the commercial progress of ERIP inventions. It begins by describing the current status of ERIP inventions in terms of level of activity and stage of development. The chapter then documents the number of ERIP technologies that have been in the market (i.e., generating sales) during various years since 1980. This assessment draws on the full database of information on 439 ERIP technologies. The chapter further extends this analysis of commercialized inventions to assess the length of time technologies have remained in the market. Attention then turns to assessing the performance of ERIP based on the total sales of ERIP technologies relative to the program's appropriations and grants. The chapter ends with a description of royalties from licensed ERIP technologies.

#### 3.1 CURRENT STATUS OF ERIP INVENTIONS

Analysis of the status of ERIP technologies in 1993 indicates that many (81%) of the inventions in the promising sample are either actively being developed or are being pursued at a low level of effort (Table 3.1). These results suggest a slight decline in level of activity compared to 1991, when 94% of the promising sample of inventions were under development at either an active or low level of effort. This trend is reinforced by the results for "other" inventions. In 1993 only 24% of the sample of "other" inventions were actively being developed, while in 1991, 80% of these inventions were under development.

Analysis of the stage of development indicates that few ERIP technologies were in the concept definition and development or working model stages in 1993 (4% of the promising inventions and 24% of the other inventions). Nearly one-third (31%) of the other inventors were undergoing prototype development, testing, and engineering design, which was their most frequent stage of development. This was also the modal stage for the other inventions surveyed in 1991.

More than half (54%) of the promising inventions were in limited or full production and marketing in 1993. A similar percentage (52%) characterized the sample of promising inventions in 1991. In 1993, 17% of the other inventions were in limited or full production and marketing, which is slightly less than the 25% rate in 1991. The 56 promising inventions and 22 other inventions that had reached limited or full production and marketing by 1992, based on Table 3.2, are only a subset of the population of ERIP inventions with sales. This is because only a subset of the ERIP inventions with documented sales based on previous ORNL evaluations participated in the 1993 survey.