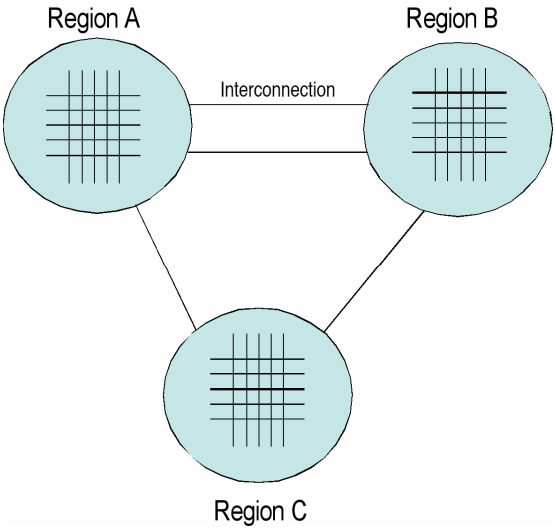

Figure 17.2. *Weak interconnections between strong electrical systems*

17.4. Liberalization of energy markets: reasons for change

The electricity sector has evolved in different ways between its inception and the present situation. Initially, the development of electrical networks focused around independent producers and networks with limited geographical coverage designed on a model that is now called the 'micro-network'. The requirement for electrification and the building (or rebuilding) of an infrastructure covering the needs of an entire nation have led to the development of these networks and their interconnections in the form we know today. The current phase of liberalization of electric energy markets is the most recent development of this system (while waiting for the next).

When operated before liberalization of energy markets, the system gave total satisfaction to some and dissatisfaction to others who obviously desired a change. We can now question the reasons that led to the liberalization of energy markets around the world, including countries where the previous regime was satisfactory to almost all. This is especially important since we

know that this sector is highly capital intensive, that the performance of certain infrastructures is calculated in the long term, and that the time span of construction of such structures is significant.

There are multiple and different motivations for such change, depending on whether the networks are considered ‘mature’ (in developed countries) or ‘developing’ (in emerging countries). There is also a category of networks corresponding to developing countries with vast regions that do not have electricity (more than two billion people worldwide at the present time).

To understand the reasons that led to this change, we must understand the conditions during the period this movement was launched, i.e. in the early 1990s (with the exception of the first countries to experience liberalization of the generation sector). On the geopolitical front, this period corresponds to the fall of the Berlin Wall and globalization of the economy. In addition, at that time electrical energy was relatively cheap and plentiful.

Without being exhaustive, we can list below some of the reasons that contributed to this change, especially in industrialized countries. These reasons are not necessarily cumulative, i.e. some of the reasons (such as privatization) are valid only for certain countries:

– A relatively mature industry of generation, transmission, and distribution of electricity. Electrification needs are not what they were during the post-war reconstruction and development.

– Global ideological movement towards greater competition and less regulation.

– Privatization of state enterprises in need of funds and the desire to reduce the debts of different states.

– Pressure from industrial and large commercial consumers to reduce electrical energy cost, combined with the need to improve the competitiveness of domestic industries facing more aggressive competition (due to globalization).

– Surplus production capacity combined with differences in price between electric utility companies and countries, although interconnected at times. For example, within a country like the United States, the cost of electricity could double from one state to another (see Figure 17.3 for an illustration).

– Technological means of generation, reducing operating costs, higher efficiency compared with older technologies, and reduced environmental impact (e.g. combined cycle technology). Moreover, the time taken for power plant construction using this type of technology is also reduced, thereby promoting market penetration of independent power producers.

– The virtues of competition for the benefit of consumers and development of the electric power industry (incentives for more innovation).

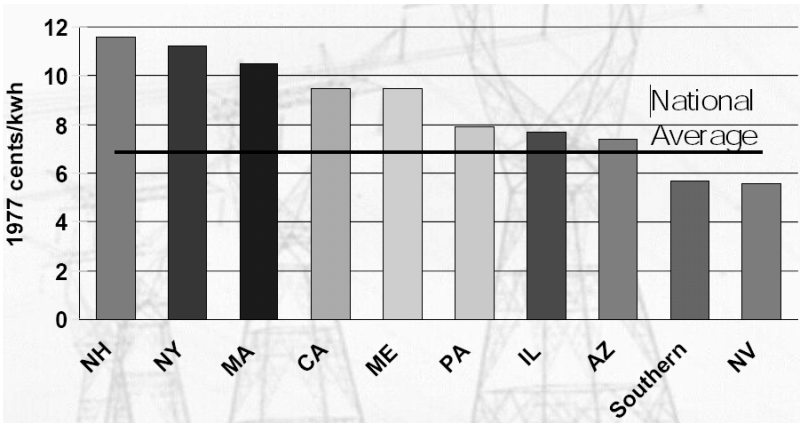

Figure 17.3. *Price differentiation between states in the US before deregulation (courtesy of George Gross)*

Today, some of the above reasons are still valid, while others are not. One of the no-longer valid reasons is the availability or even the abundance of primary energy. This reached historic peaks which significantly affect electricity prices, even in countries with a low proportion of use of primary energy to produce electricity.

Of course, the situation is quite different for emerging countries with strong growth and heavy investment needs. For these countries, there is often a mixture between strong state control and the need to attract outside investors, especially in the generation sector. These states are not always able to handle the financial burden of these investments. The adopted model is often that of the single buyer, and this will be addressed later in the market models section (Chapter 18, section 18.3).