

## Dar Al Riyadh Insight #82

### Diseconomies of Scale

*Dar Al Riyadh Insights reflect the knowledge and experience of our Board, executives and staff in leading and providing PMC, design and construction management services. Dar Al Riyadh believes in the importance of broadly sharing knowledge with our clients and staff to improve project outcomes for the benefit of the Kingdom of Saudi Arabia.*

#### Introduction

Bigger is not always better. In this series of Insights diseconomies of scale are examined. Perhaps now is the time to reconsider fundamental decisions in capital project design.

Over the last several decades, the design and construction industry often gained efficiencies in cost and in performance as projects were scaled up. These so-called economies of scale have served the industry well. The challenges that scale presents and the complexity that comes with it, however, make it imperative that industry participants and stakeholders understand the implications of the decisions that are made in large complex projects.

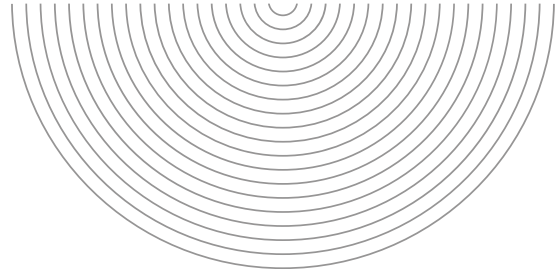
#### Economies of Scale

Economies of scale broadly arise from labor and material efficiencies. A reduction in unit costs occurs as scale grows. For labor costs, economies of scale may be associated with the ability to sustain the labor force on site longer without needing to mobilize, demobilize, or move to another area. In addition, some labor indirect may be reduced on a unit cost basis as only one camp or set of crew facilities may be needed and staffed. Construction labor may further be reduced as the time to connect one large piece of electrical equipment may be no different than connecting a smaller one.

Material and equipment efficiencies may result from a piece of equipment not costing twice as much as one with half the capacity. Efficiencies may also result with larger volumes (tanks for example) not requiring twice as much steel as a tank with half the capacity would.

Estimates would typically develop scaling factors for each major component or cost category.

While the case for capturing economies of scale is compelling, it must be tempered by the realization that diseconomies of scale have always been present. Industry stakeholders and participants must understand the drivers of such diseconomies and the factors that contribute to them.



## **Diseconomies of Scale**

Diseconomies of scale are often segregated into those arising from internal factors and those arising from externalities. In the Insights that follow in this series we will look closer at these factors.