

Energy Systems

Part 3

Energy Markets

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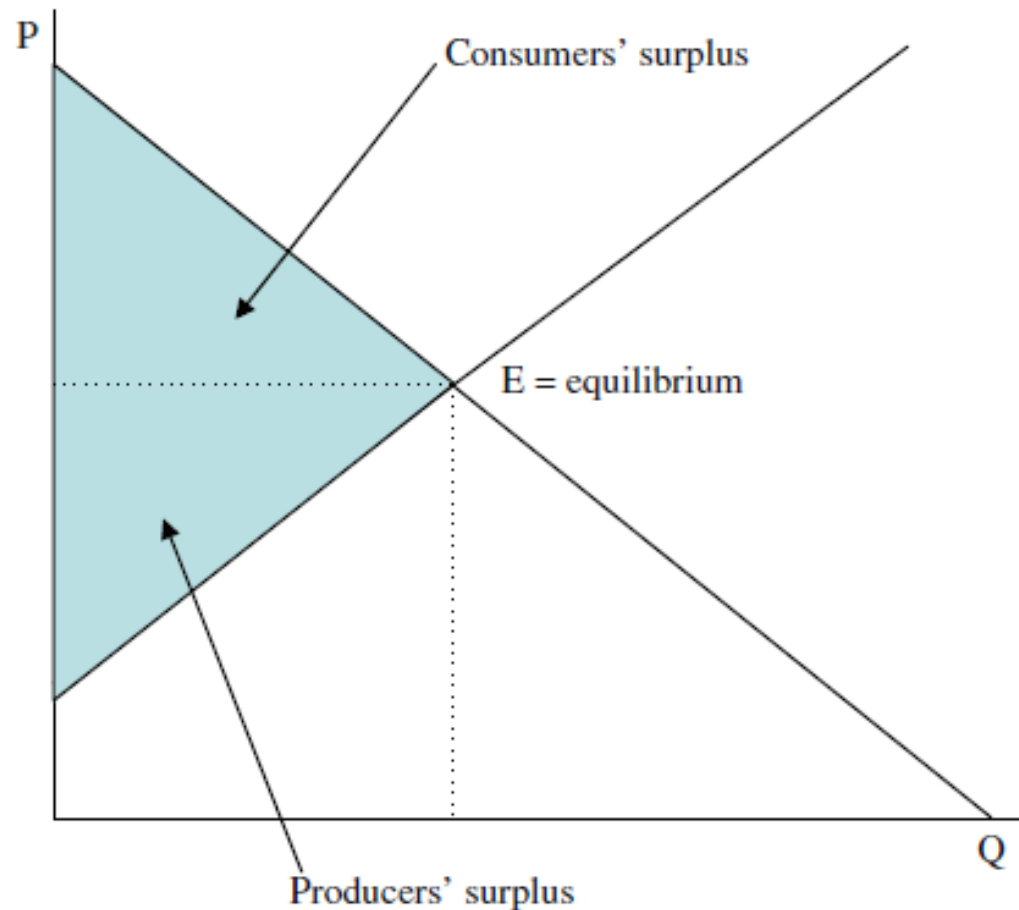
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Energy Markets and Principles of Energy Pricing

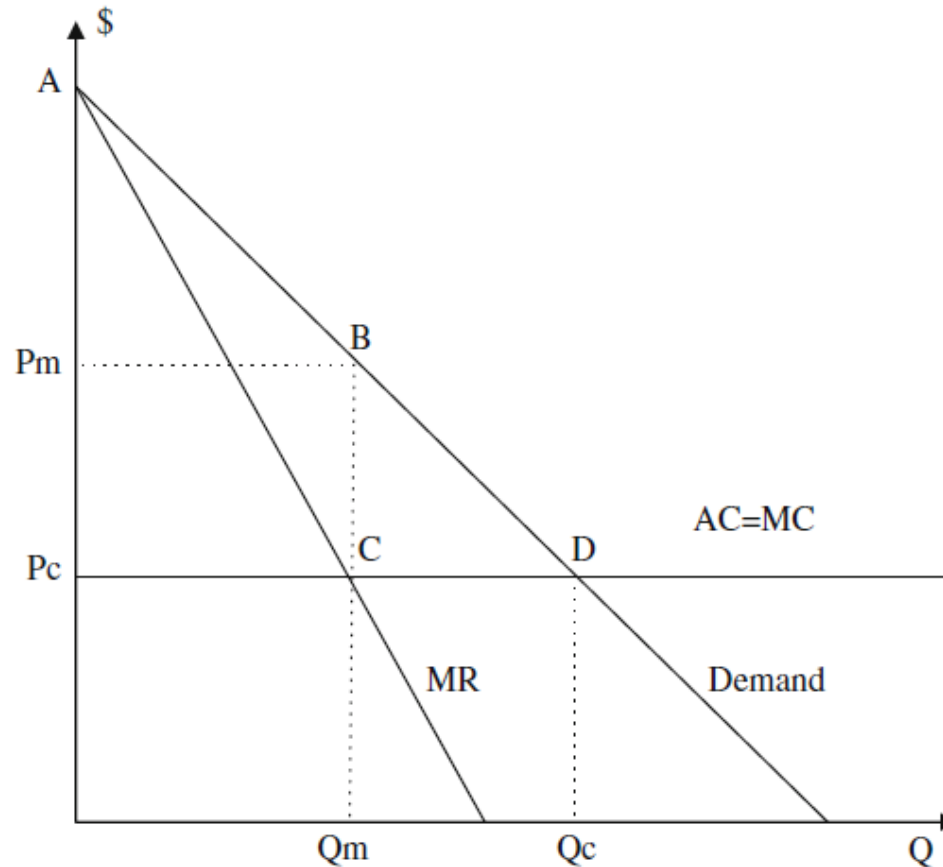
Fig. 12.3 Competitive equilibrium



Energy Markets and Principles of Energy Pricing

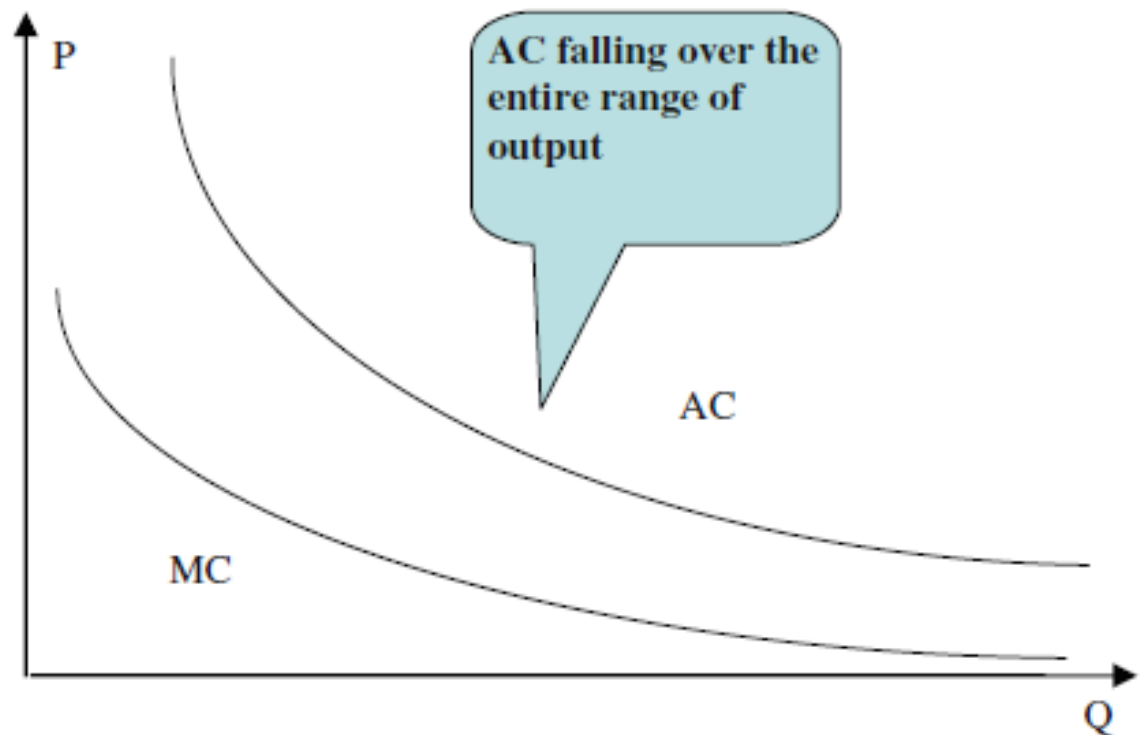
Monopoly Problem

Fig. 12.7 Price determination in a monopoly market



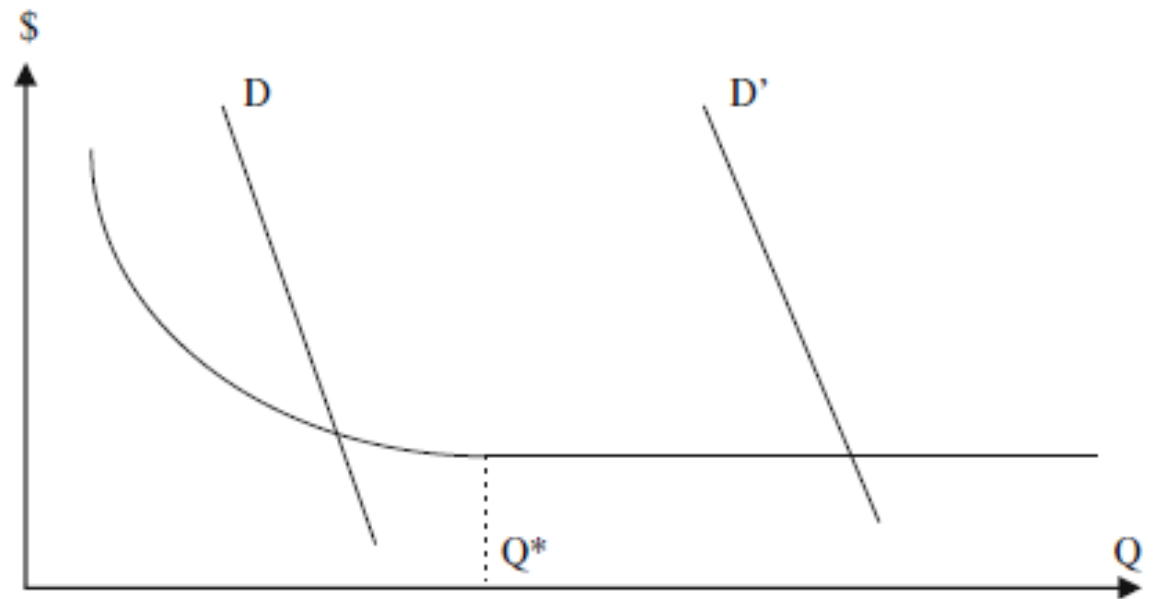
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Fig. 12.9 Permanent natural monopoly



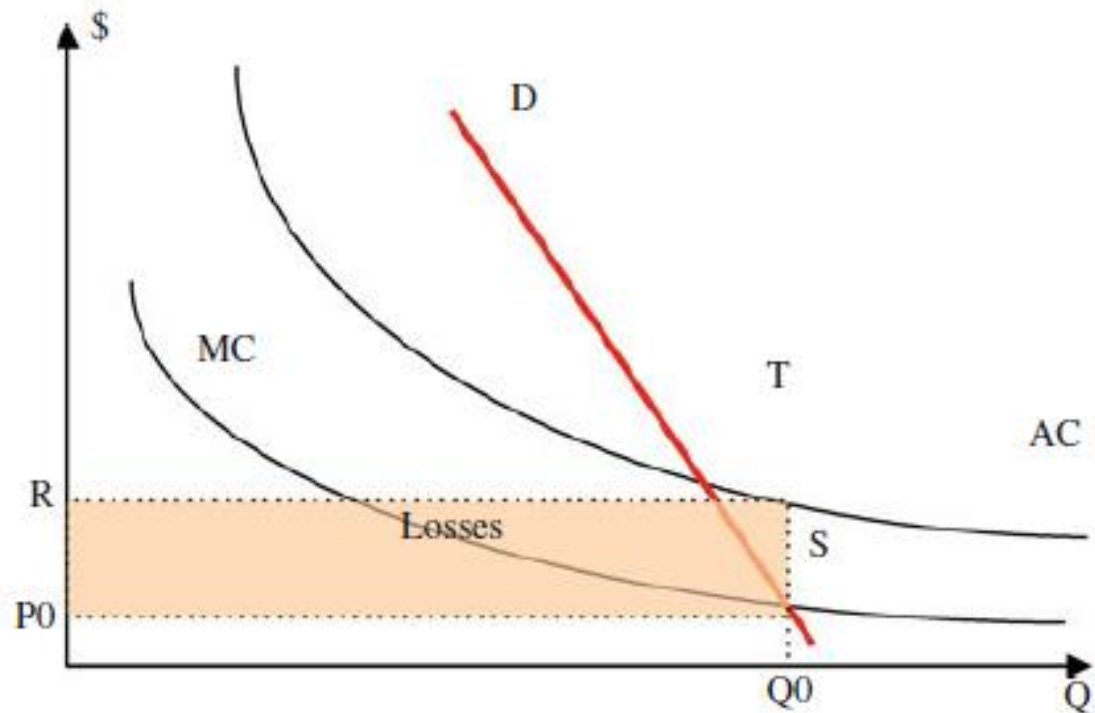
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Fig. 12.10 Temporary natural monopoly



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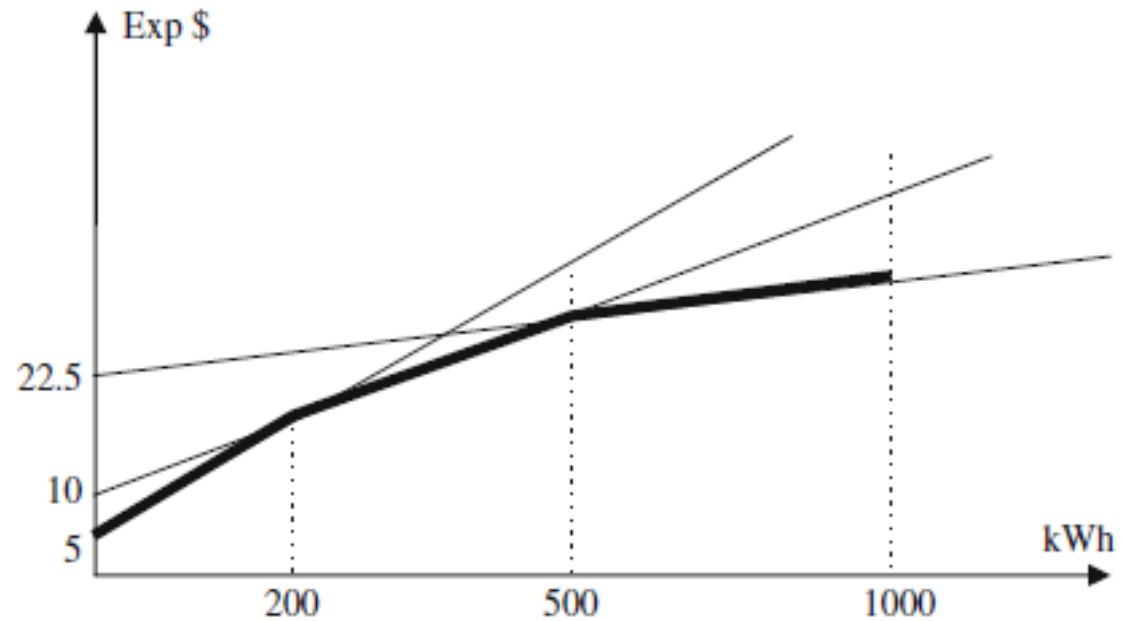
Fig. 12.12 Effects of marginal cost pricing in a natural monopoly



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Two part tariffs

Fig. 12.14 Two-part tariff example



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Ramsey Pricing

$$\frac{p_i - MC_i}{p_i} = \frac{k}{\varepsilon_i}$$

Block Pricing

References

- Mostly: Part II of
 - Subhes C. Bhattacharyya (2011): “Energy Economics: Concepts, Issues, Markets and Governance”, Springer.
- Vanek and Louis D. Albright (2008): “Energy Systems Engineering, Evaluation & Implementation” Mc Graw Hill.