

Testimony to State of Vermont House Committee on Natural Resources and Energy: Carbon Management

March 30th, 2016.

Nicholas Z. Muller, MPA, PhD
Associate Professor of Economics
Middlebury College

My Background

- Associate Professor of Economics at Middlebury since 2007.
- MPA Indiana University – Bloomington.
- Ph.D. Yale University
- Research cited ~1,475 times.
 - *Science* (2x), *American Economic Review* (3x).
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Last 5 years, 8 peer-reviewed articles on climate change economics and CO₂ policy.

Outline of Testimony

- Markets.
 - Supply and Demand.
 - Market Equilibrium.
- Motivation for Government Intervention.
 - Market Failure.
 - Externality.
 - Hidden subsidy.
- Policy Instrument Design.
 - Taxes versus command and control.
 - Calibration of the tax.

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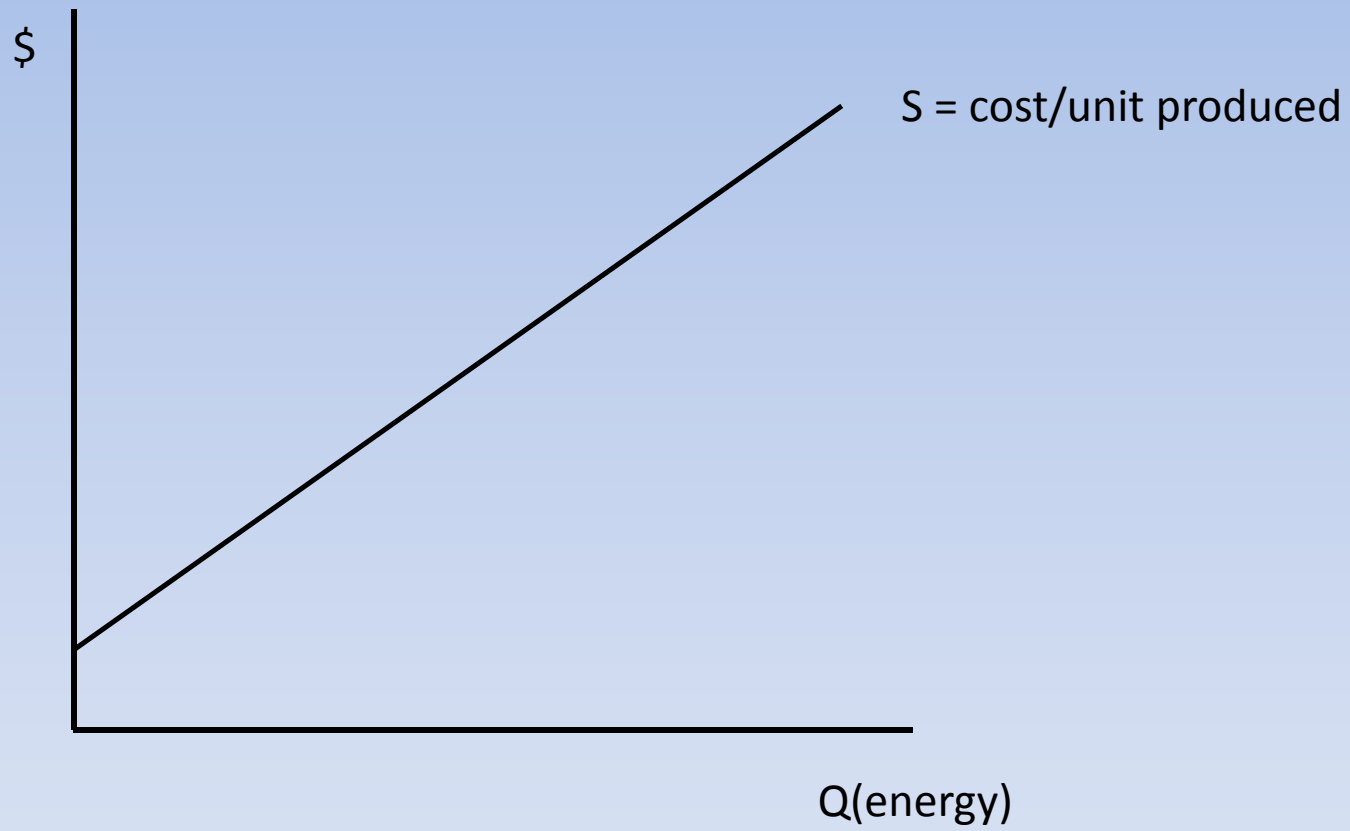
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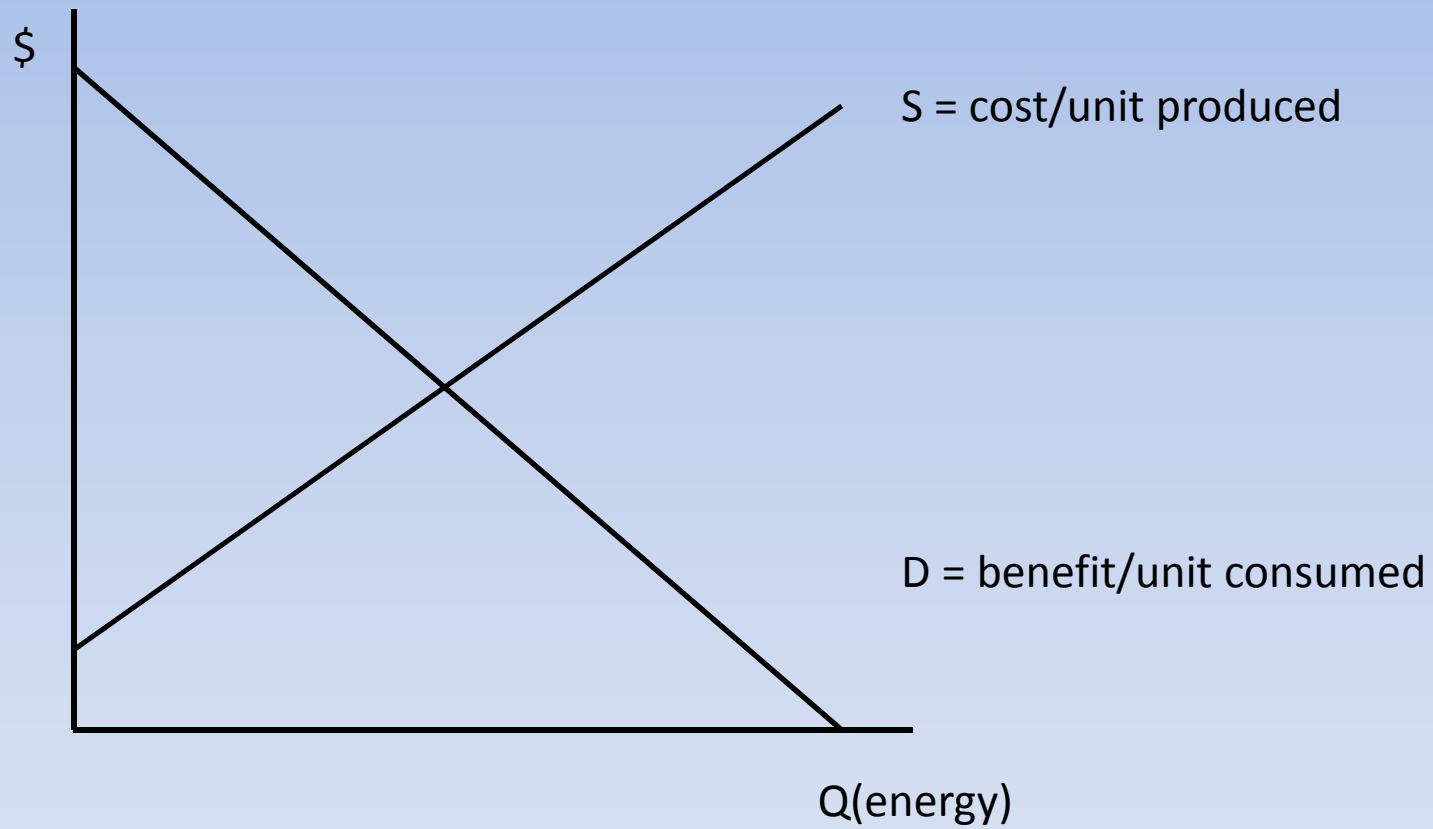
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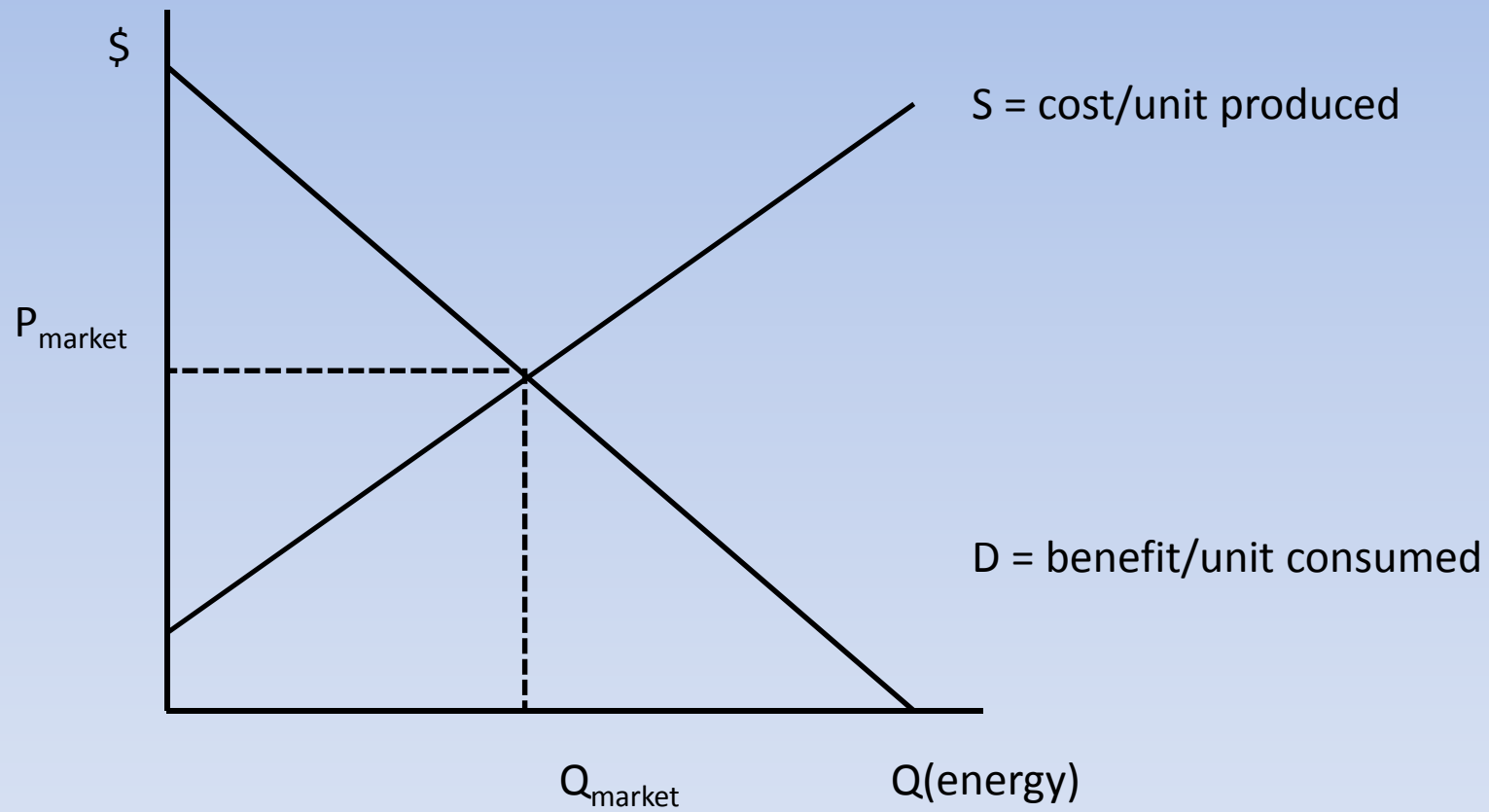
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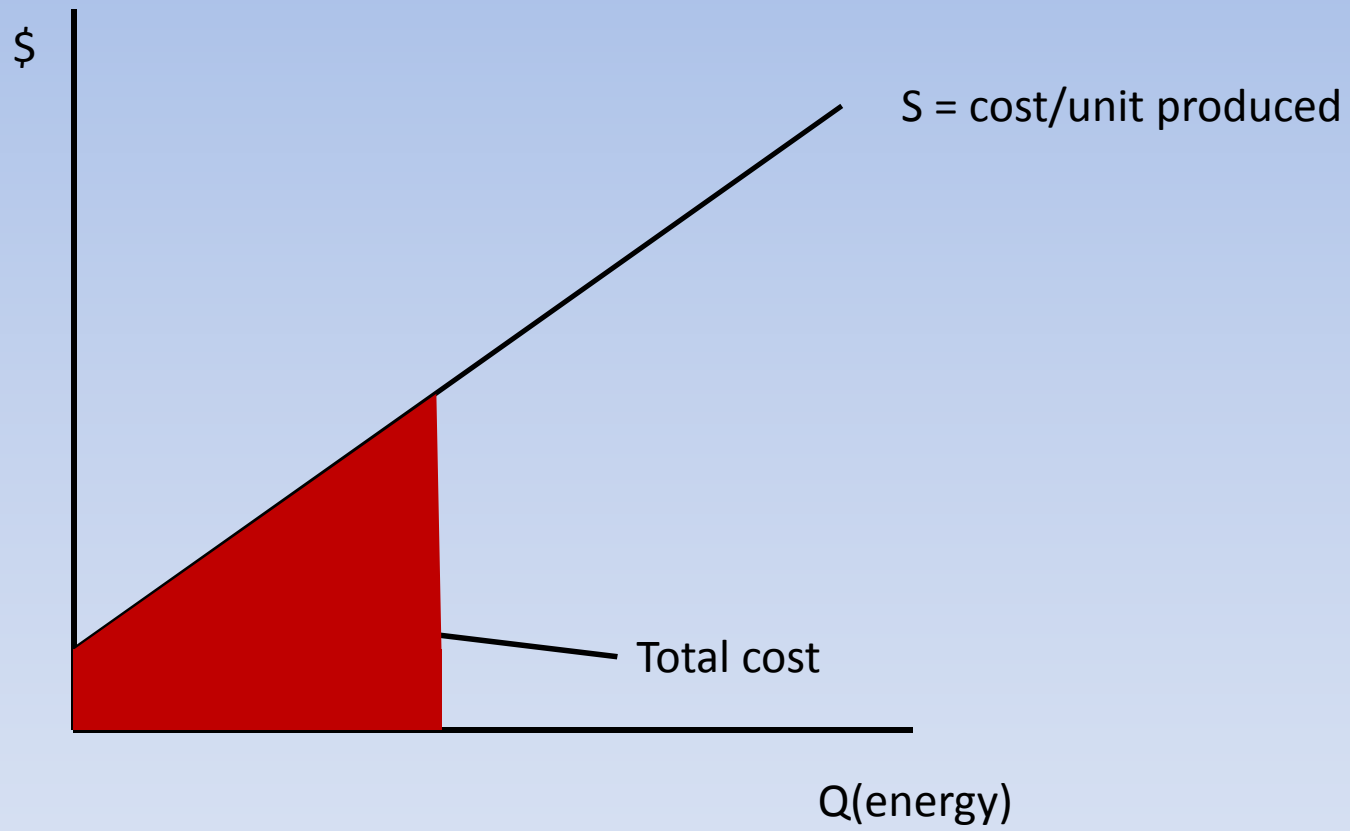
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- Under certain circumstances markets efficient.

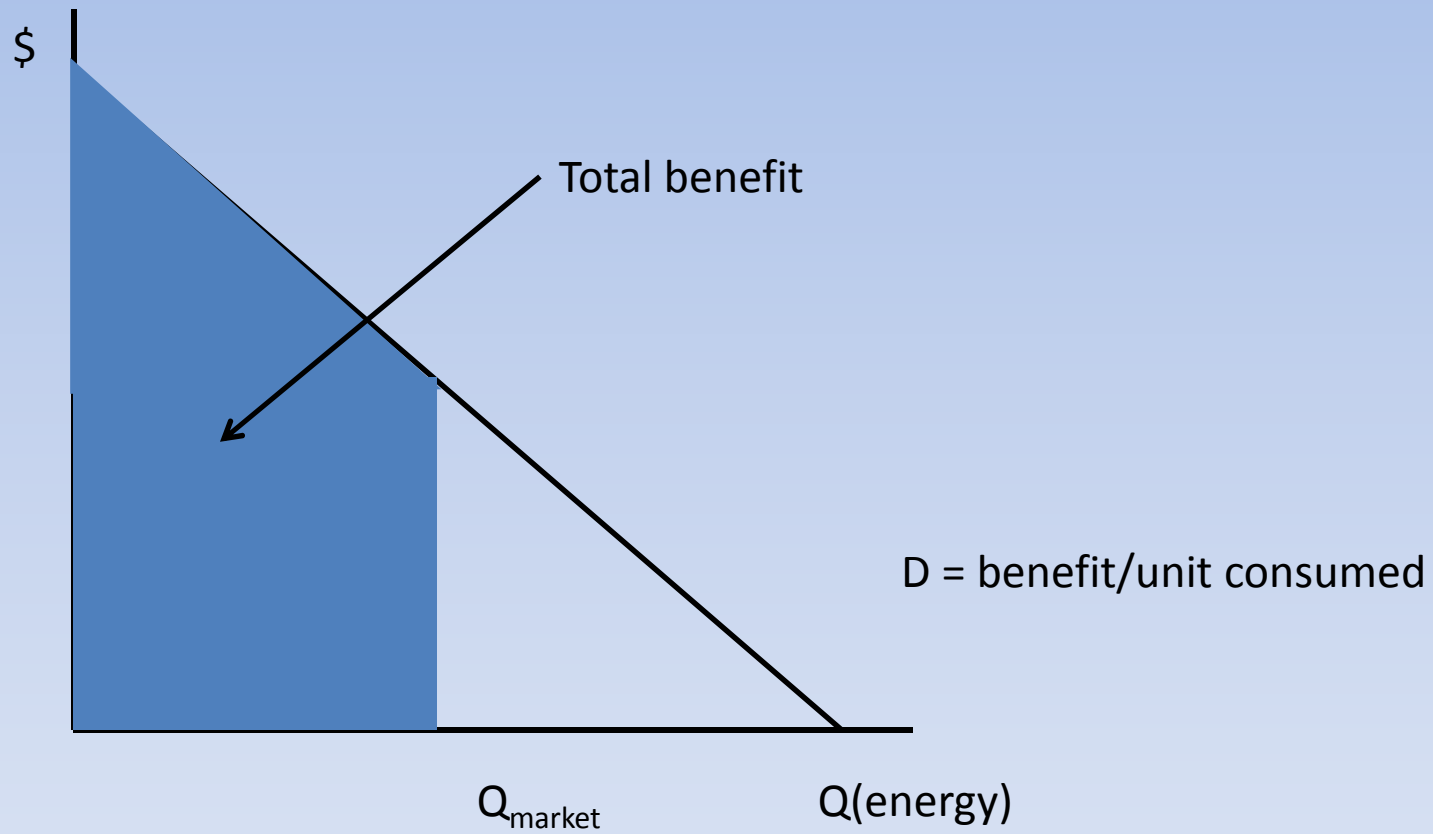




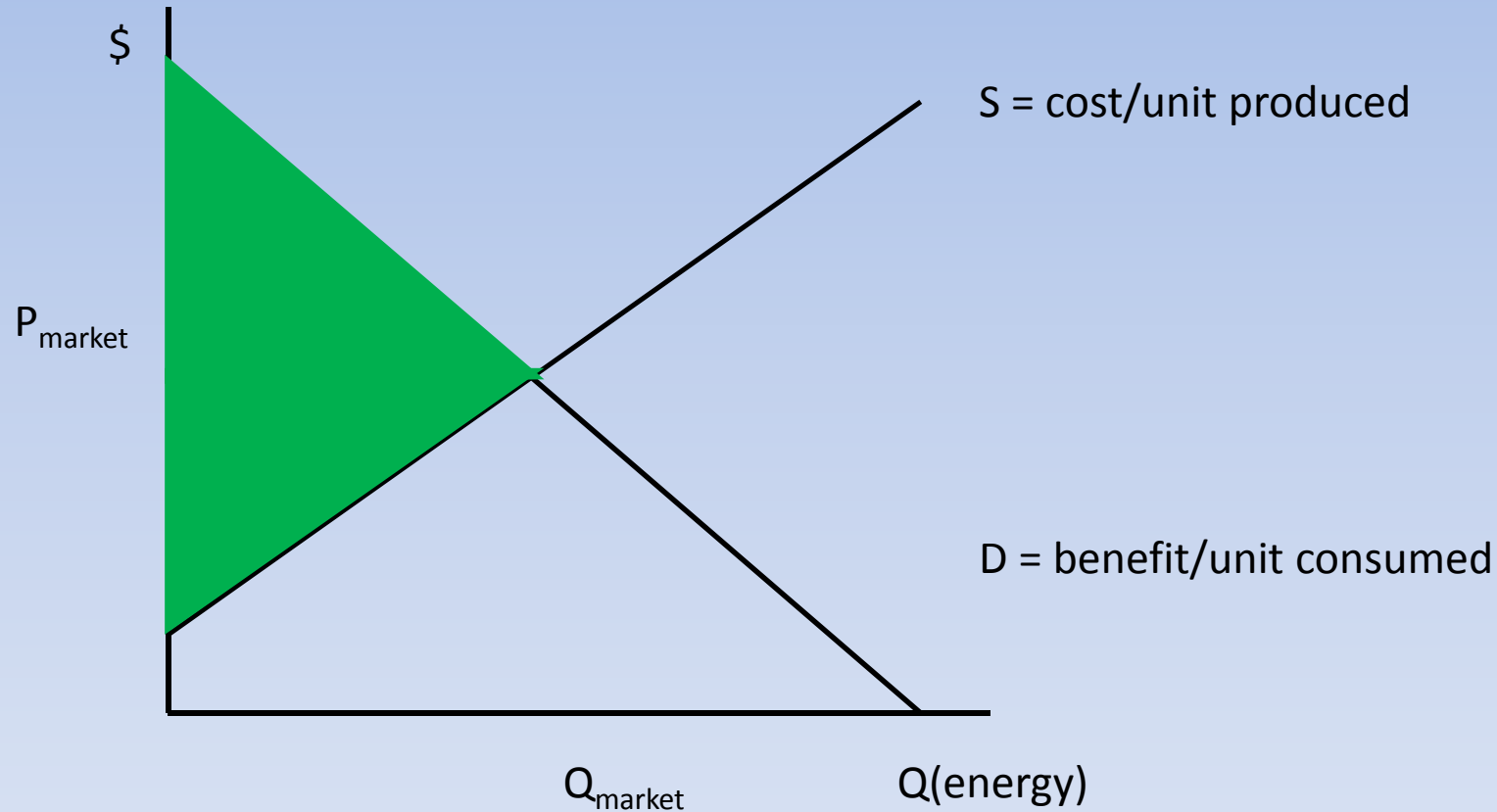








Markets are efficient:
Net Benefit (Total Benefit – Total Cost)
Maximized at $(P_{\text{market}}, Q_{\text{market}})$



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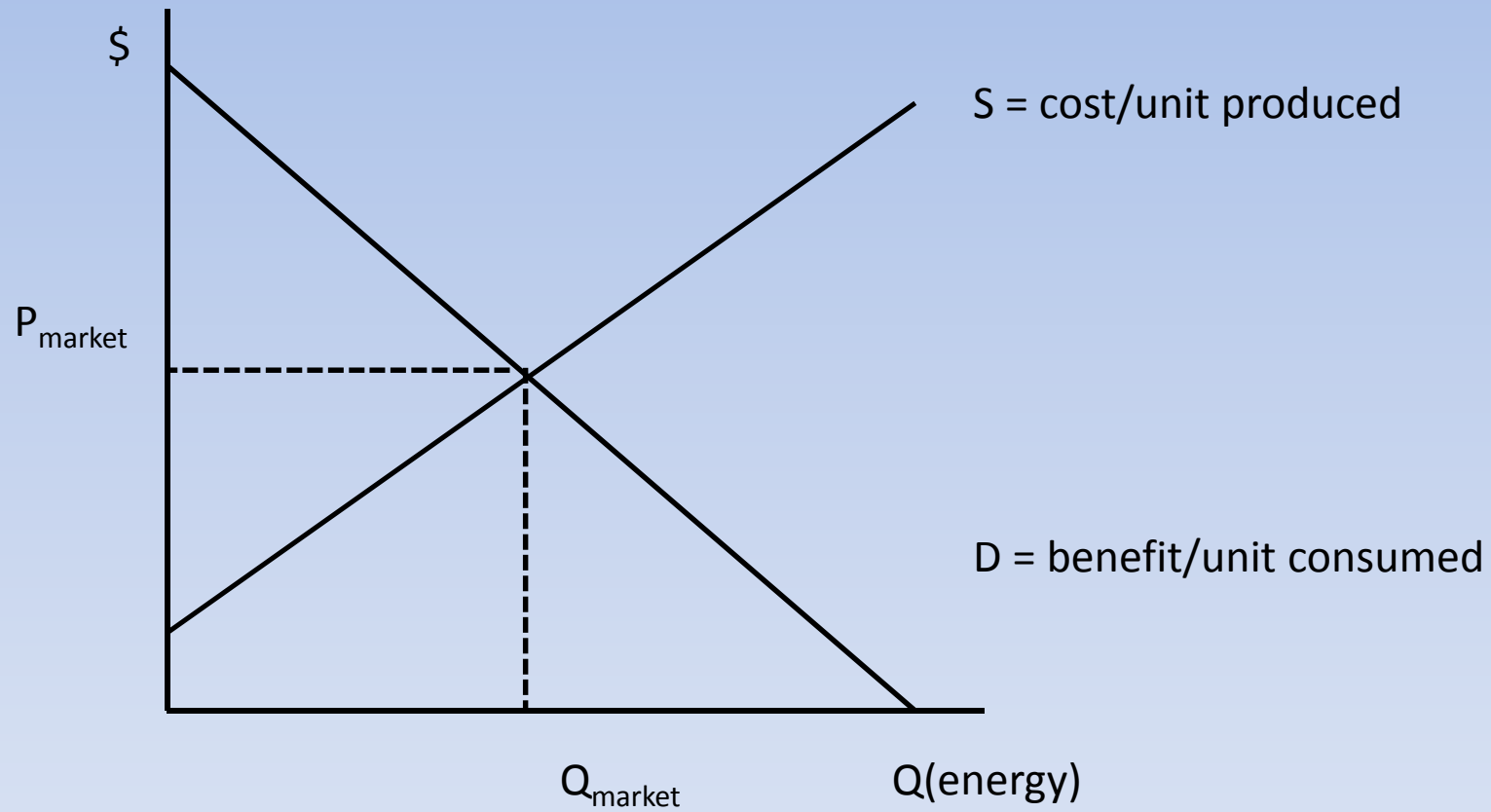
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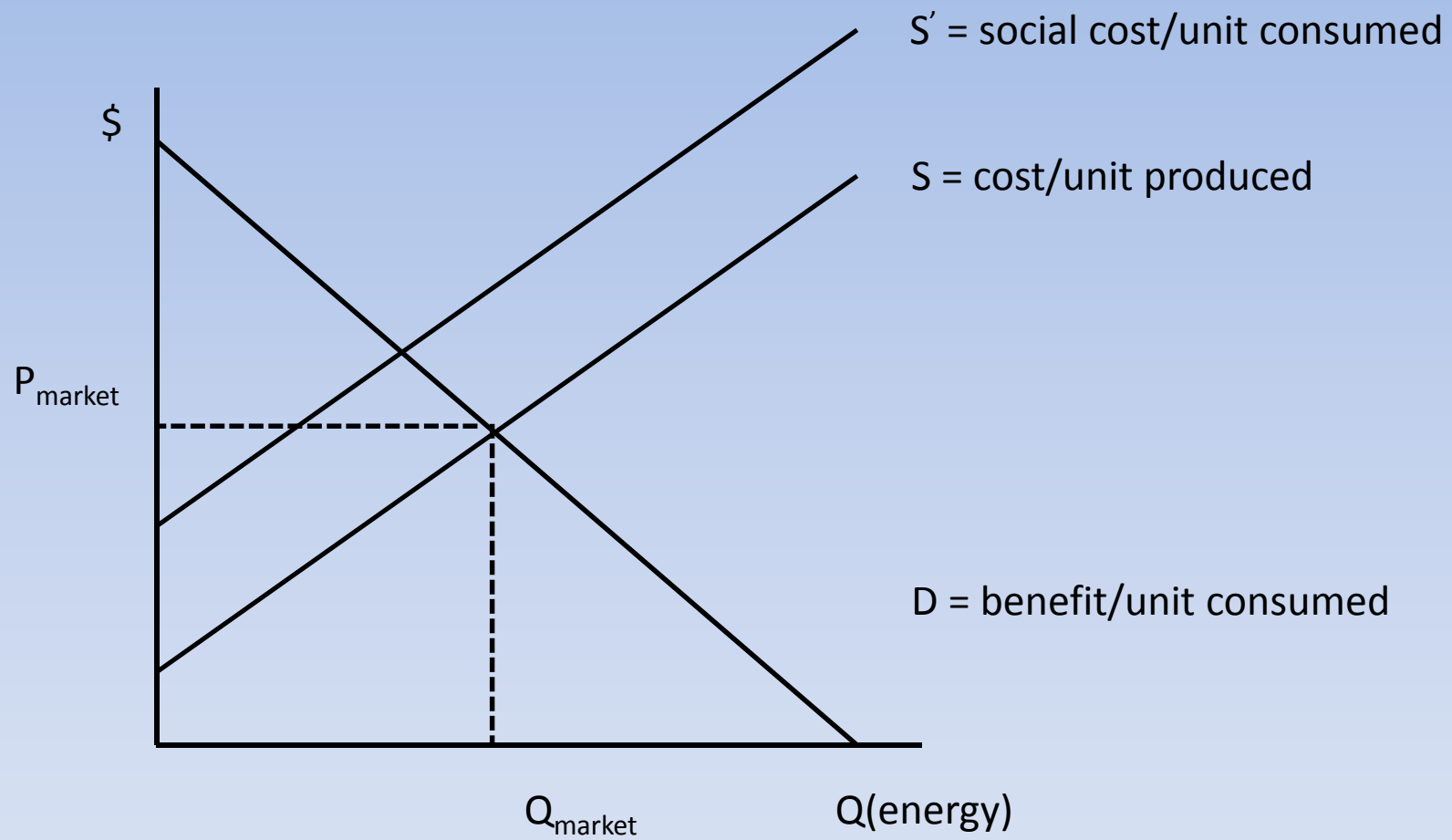
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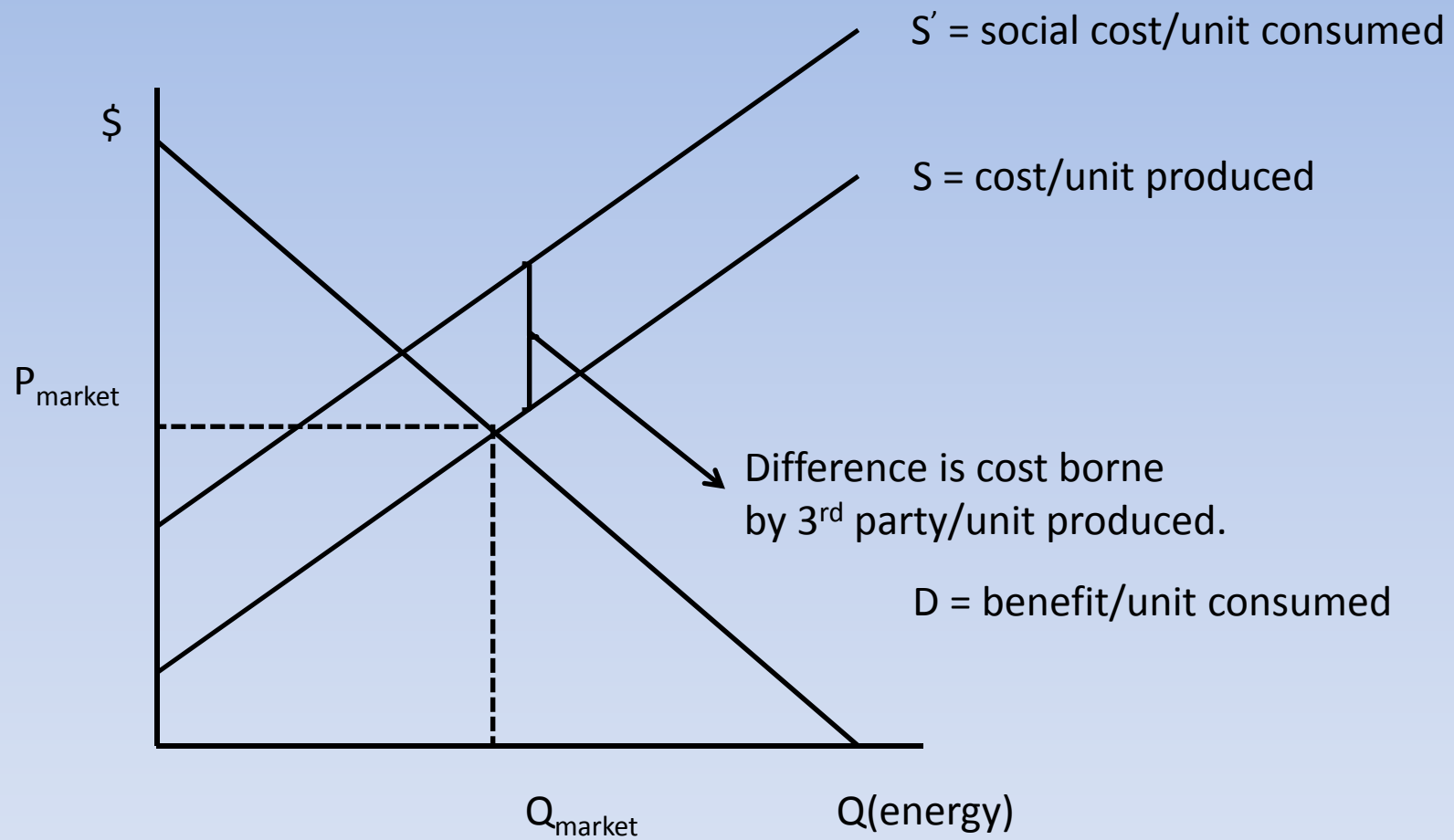
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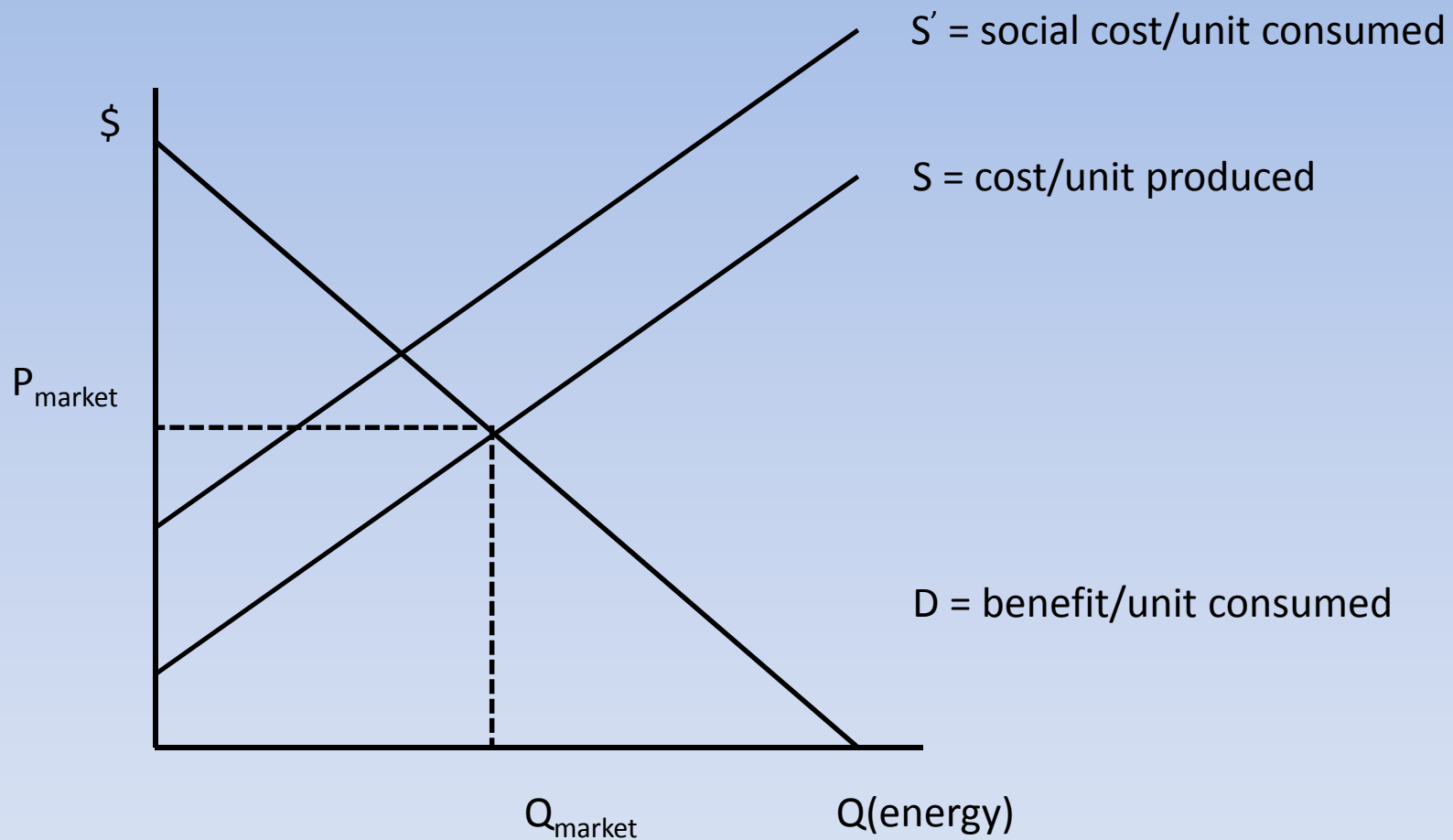
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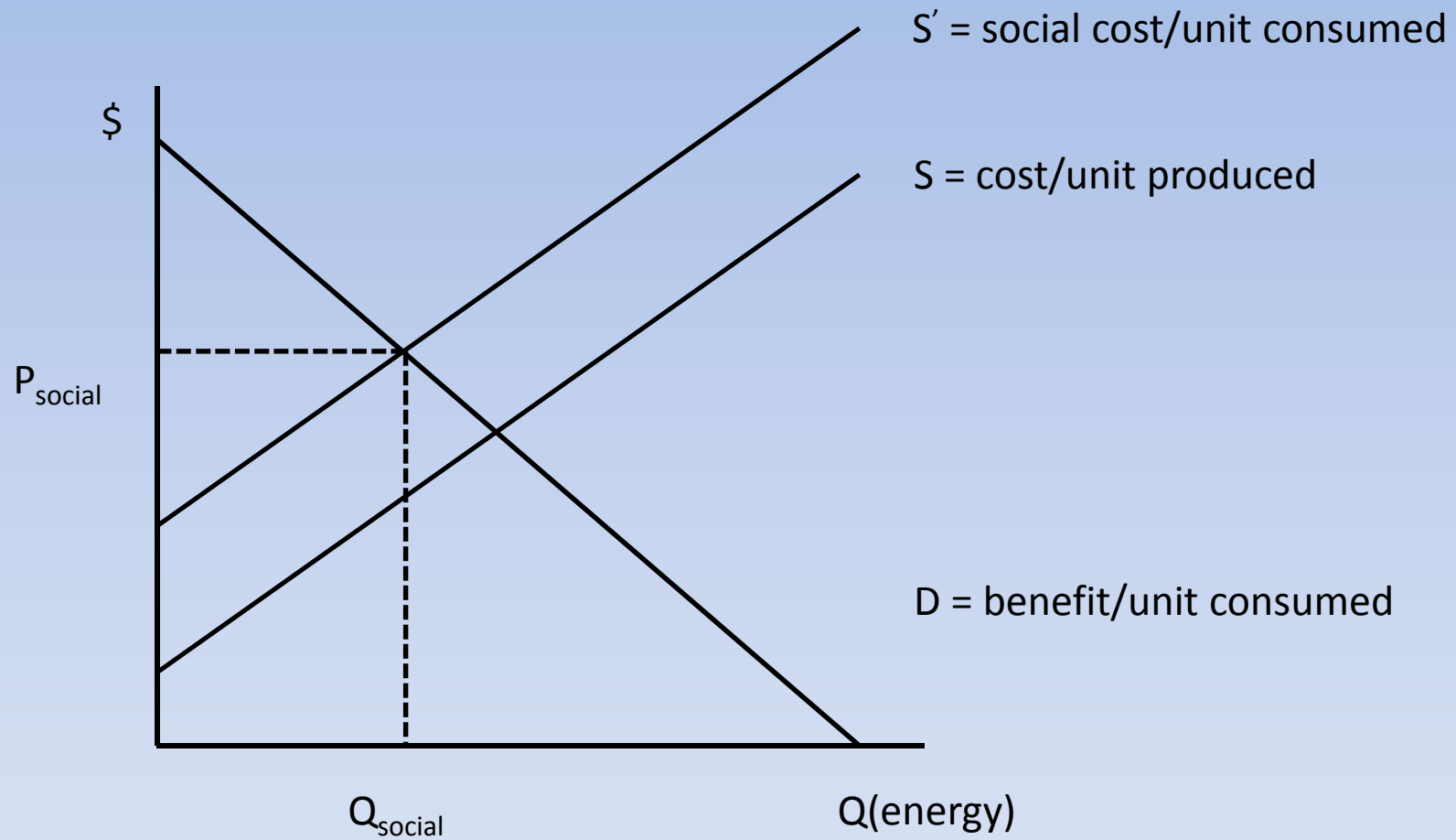
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 - Consumers face a price for goods that does not
 - Markets *cannot* yield socially optimal outcome.
- Can government intervention facilitate a more efficient outcome?**

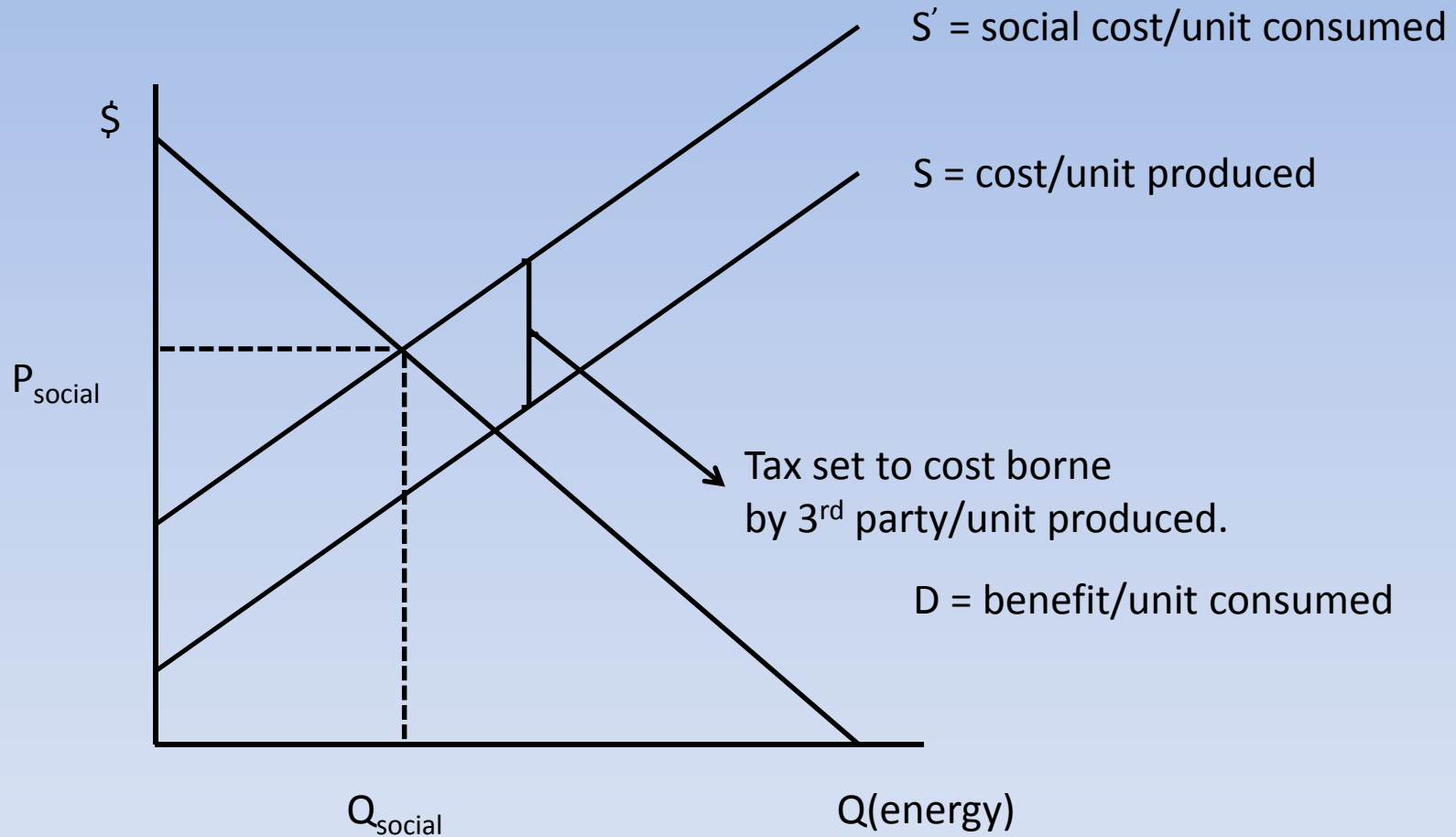
Market Equilibrium



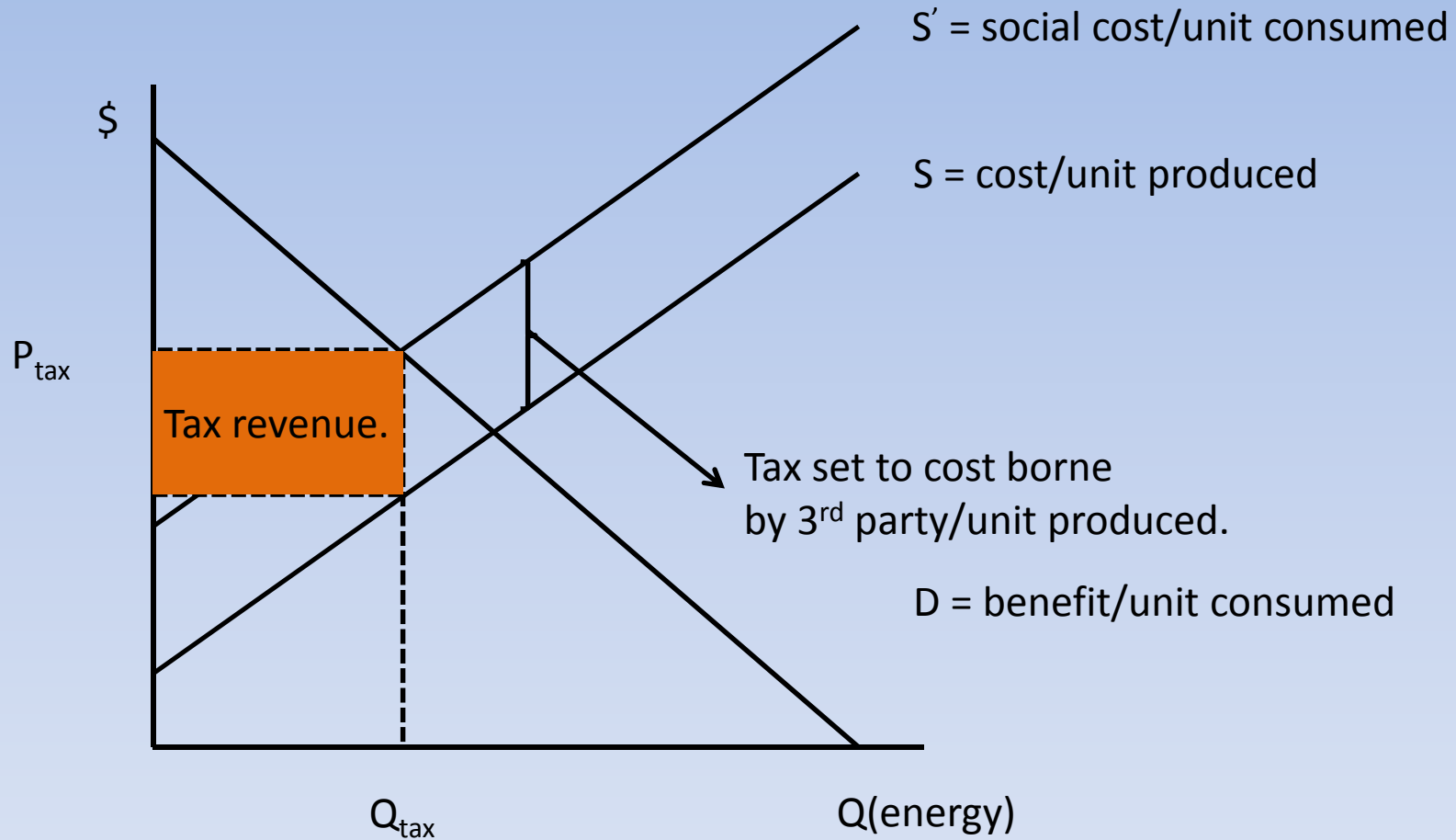
Socially Optimal Equilibrium



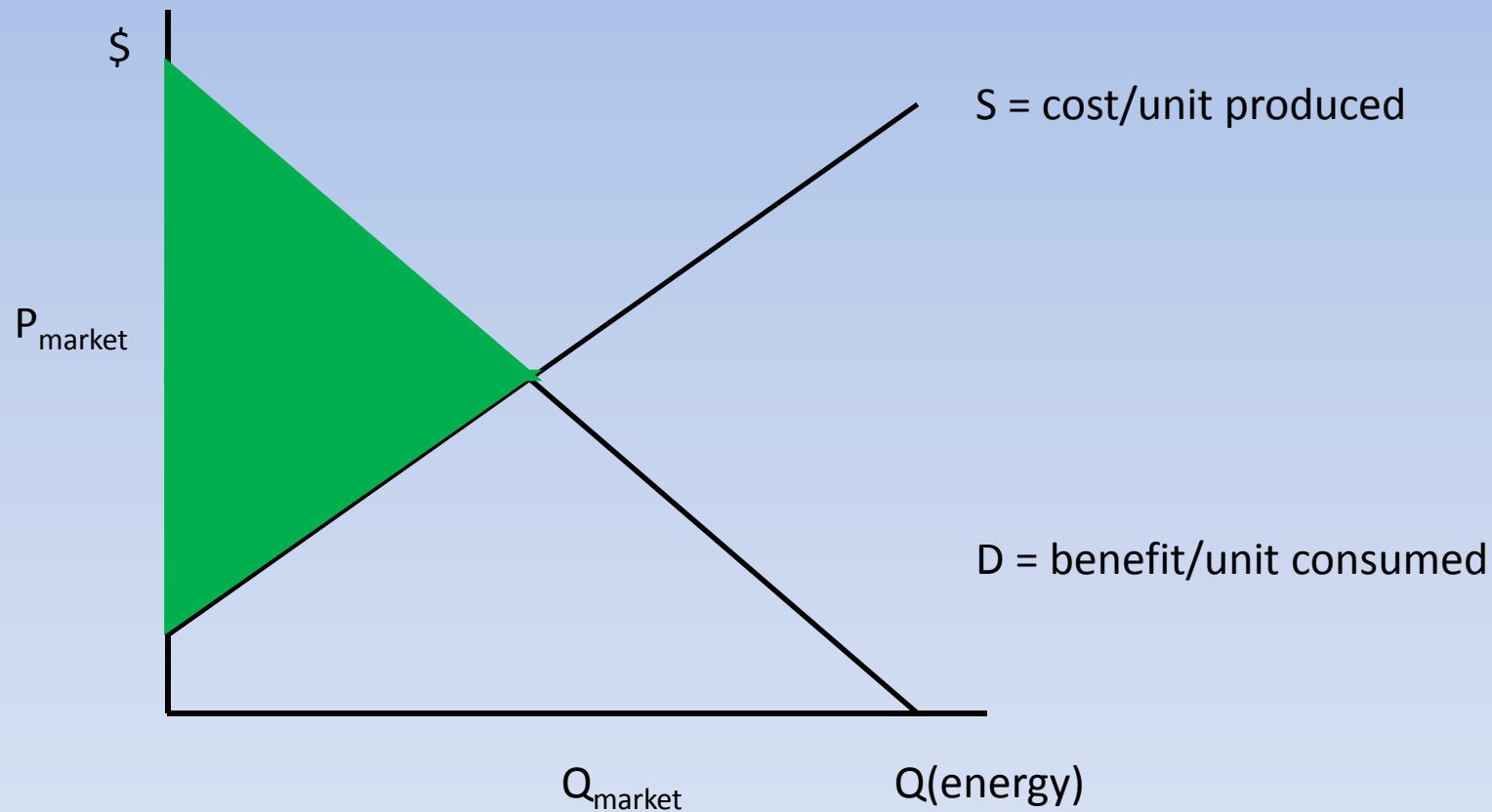
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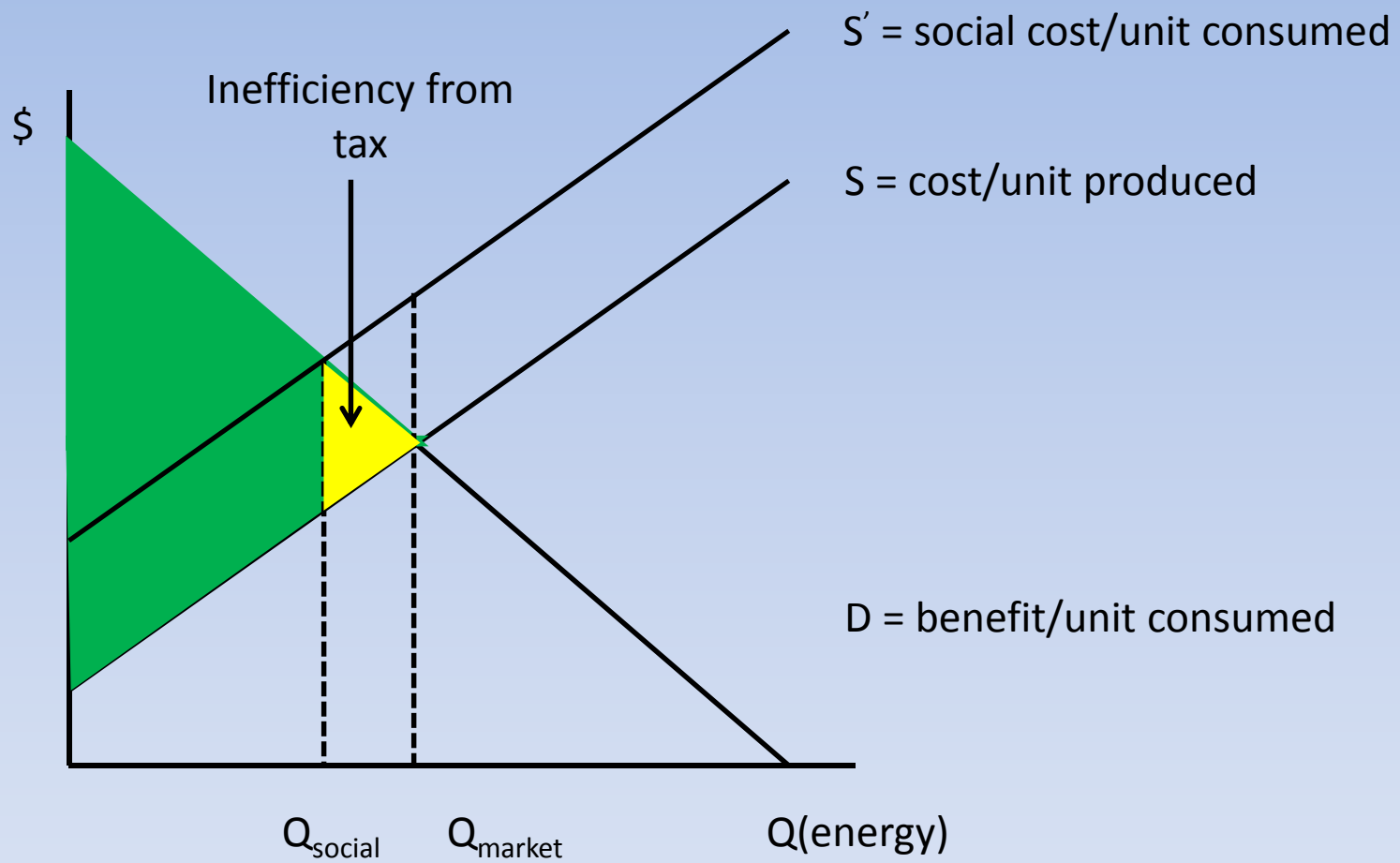


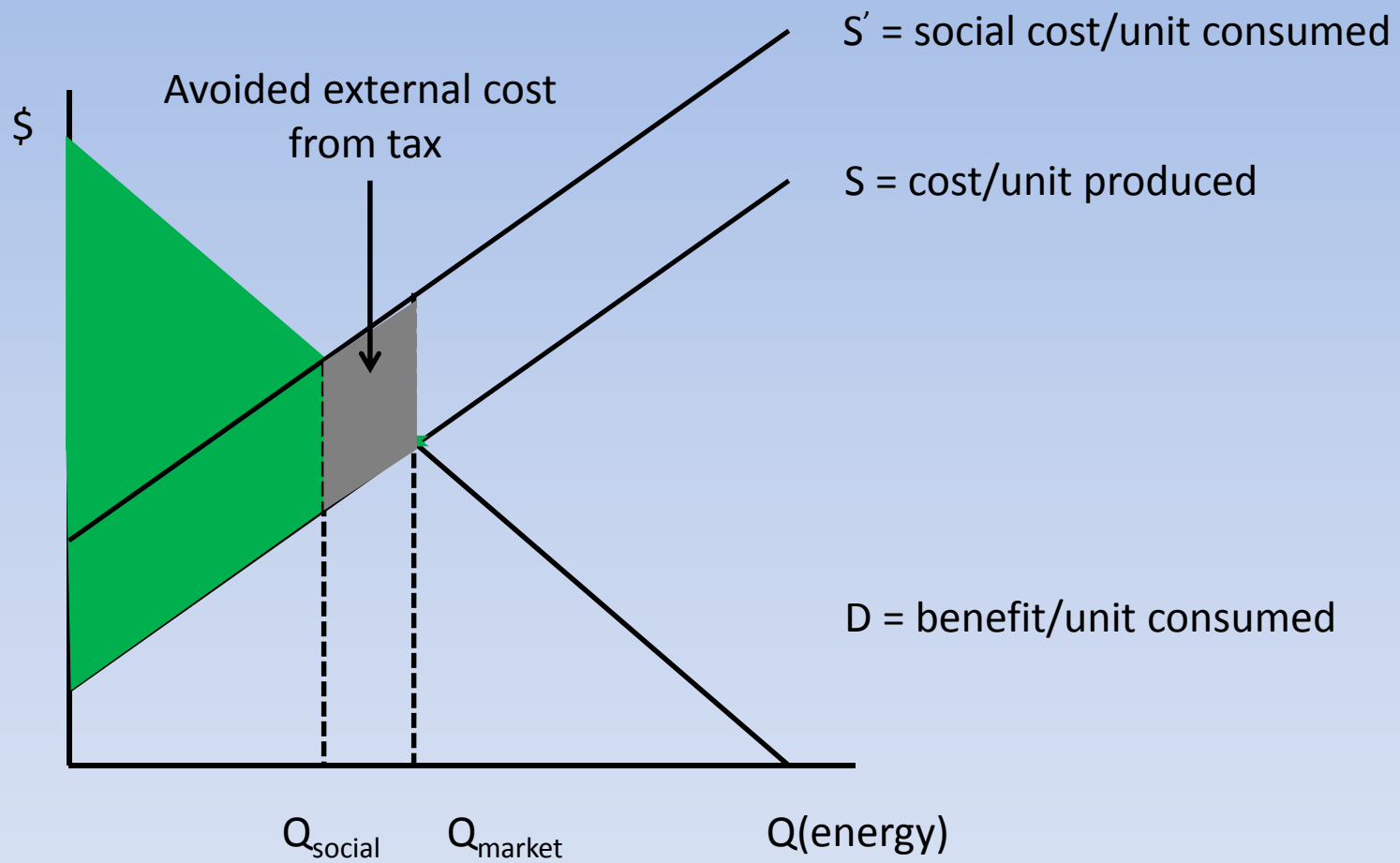
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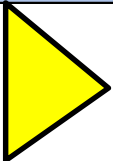
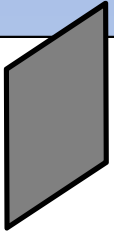
Markets are efficient: Net Benefit Maximized







How to evaluate corrective tax?

- Compare loss () to gain ().
- Since gain > loss, net benefits with the corrective tax outweigh net benefits without the tax.
- Avoided external costs exceed distortion from the tax.

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 - Property rights over land well-defined.
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- Assimilative capacity of environment acts as free waste repository: hence, subsidy.

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 - Redistribute revenue to assist lower income folks.

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 - Corrects for the social costs associated with carbon-intensive goods.
- Taxes are more efficient than conventional regulations.
 - Firms/consumers free to decide “Q” – conditional on the tax.
 - Governments typically do not know “S” and “D”.
 - Can’t set efficient regulations.

Conclusions.

- Markets are efficient under most circumstances.
- Externality is justification for government intervention.
- Corrective taxation one solution to externality.
 - Carbon tax rate should equal external cost.
- Taxes tend to be more efficient than conventional regulations.

Thank you.

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