



Backstop Technologies

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Agenda

(1) Definitions

(2) Model Backstop Technologies

(3) Examples for Backstop Technologies

(1) Discussion



Definitions

Backstop Technology

„A backstop technology is defined as a new technology producing a close substitute to an exhaustible resource by using relatively abundant production inputs and rendering the reserves of the exhaustible resource obsolete when the average cost of production of the close substitute falls below the spot price of the exhaustible resource.“

(Source: <http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1024&context=commwkpapers> p. 1)

An exhaustive resource is substituted by an infinitely available resource (backstop resource).



Model Backstop Technologies

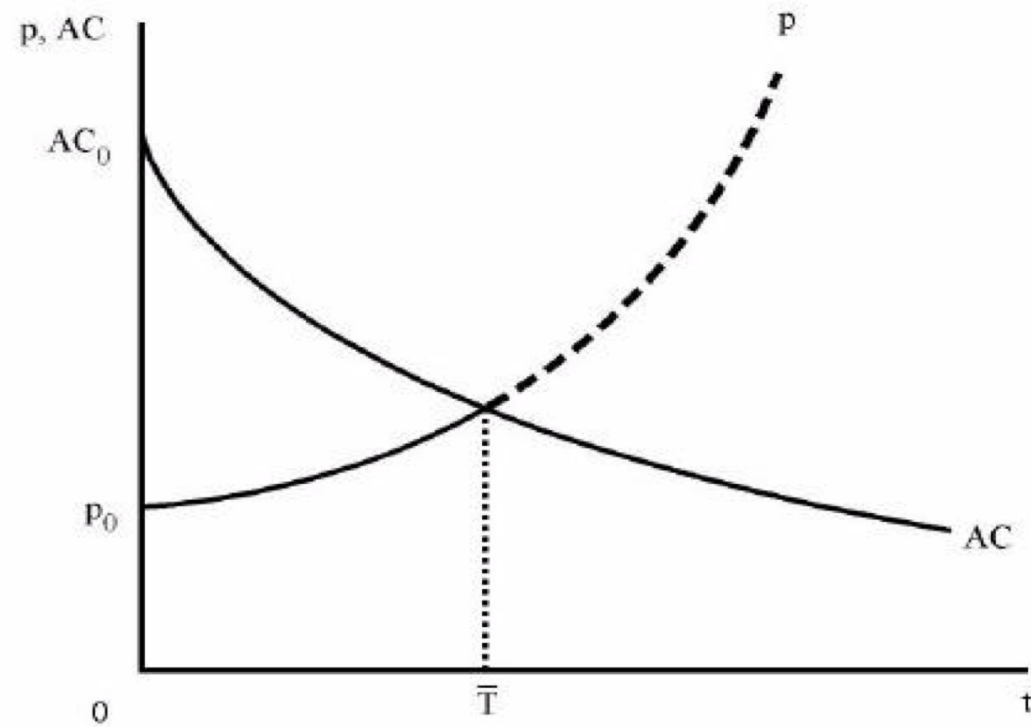


Figure 1. The spot price and the backstop technology average cost trajectories



Model Backstop Technologies

- T switch from previous resource to backstop technology
- Before T backstop technology is still too expensive
- After T backstop technology is used → monopol



Examples for Backstop Technologies

Coal / Renewable energies

- Coal is substituted with renewable energies which makes power production more environmentally friendly
- Renewable energies are an exceptionally good example for backstop technologies because the endproduct (power) is the same



Gasoline / Hydrogen

- Gasoline can be substituted with hydrogen because oil is a scarce and harmful resource
- Lack of social approval because of the dangers with hydrogen





Discussion

1. How useful is the model for backstop technologies
2. Can the cost of switching from one technology to another be integrated in the model?



Literature

<http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1024&context=commwkpapers>

<http://wirtschaftslexikon.gabler.de/Definition/backstop-technologie.html>