

Stimulating Learning Investments for Renewable Energy Technology

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Learning investments for a technology is the difference between actual price and price at break-even, i.e. the additional cost for the technology compared to the cost of having the same service from technologies which the market presently considers cost-efficient. The experience curve phenomenon shows that deployment will reduce unit price and learning investment per unit will decrease and become zero when the break-even point is reached. The learning investments thus indicate the cost, which will have to be supplied through the market in order to make the technology competitive. The learning investments are estimated from experience curves for three technologies: solar heated swimming pools, wind energy and residential photovoltaic systems. Comparisons are made with public RD&D spending for these technologies. The results indicate two distinct phases in the development of the energy technologies from concept to market maturity: a first phase dominated by public RD&D support and a second phase dominated by learning investments provided through the market. The learning phase may require public deployment policies to provide the technology with learning opportunities on the market. An important question is how governments can stimulate learning investments from private sources. The paper discusses how efficient government deployment programmes for the three technologies have been in this respect. In this context, the paper also discusses the new German law on priority for renewable energies.