

International Energy Journal, Volume 11, Issue 4, December 2010

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External Costs of Energy Security and Climate Change

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Abstract

This paper presents the external costs of electricity due to climate change and security of energy supply derived during EU Framework 6 project "Cases". The cost of green house gases emissions important component of the total external cost of electricity production. In the framework of the CASES project, two approaches were followed to assess global warming. With the first methodolo the quantifiable marginal damage costs of climate change were estimated, while with the second the marginal avoidance costs of GHG emissions was based on Meta analysis. The paper will focus the power sector therefore for external cost of energy security the Value of Lost Load (VOLL) will applied. The aggregate value of security of electricity supply can be expressed by multiplying the probability of the intensity, frequency and duration of supply disruptions, i.e. expectation value o amount of electricity not served by VOLL. The paper discusses external energy cost evaluation methodologies, results of external costs of climate change and energy security assessments prov in CASES project and develop recommendations for the integration of these external costs in dec making in energy sector.

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