

Renewable Energy – Global Market Trends and Changing Policy Challenges

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Renewable energy is expected to play an increasingly important role in energy supply according to IEA scenarios. Growth will be particularly strong in the power sector but renewables are also expected to be more significant in the heating and transport sectors.

Current market trends in renewable electricity are positive. These trends are expected to continue according to IEA market forecastsⁱ, with renewables producing as much electricity as gas and twice that of nuclear in the near future. Renewable generation is expected to increase by some 40% between 2012 and 2018. The main focus for market development is now shifting to emerging and developing economies where demand for power is rising.

This market development has stimulated very significant cost reductions for wind and solar PV, and renewable electricity is now competitive with other sources of new generation. Financing costs play a major role in determining the costs of power, and these costs are very much influenced by the policy frameworks in place.

Renewables can and do make a growing contribution to providing heat and transport. Renewable heating is an under-deployed resource, which can be cost competitive in the right circumstances. Policy makers should include measures to encourage renewable heating in sustainable energy strategies and plans. The role of biofuels in the transport sector has been expanding slowly due to concerns over long-term sustainability. Future expansion will rely on the development and deployment of advanced biofuels technologies, which are only slowly reaching full scale production.

As renewable technologies are introduced into particular markets the principal challenges evolve and so policy priorities need change. At the early stages priority is to provide a secure environment for early investors. Once deployment volumes start to grow, priority shifts to ensuring investors are not over-rewarded and that policy costs are manageable. Finally at higher market shares, technical and market integration issues become the key.

A recent IEA studyⁱⁱ has shown that high shares of variable renewable electricity generation is already being achieved in several markets and that much higher shares can be achieved technically. At low shares integration is not a problem if some basic measures are taken. At higher shares a whole system approach is needed, ensuring that renewables are deployed in a system friendly way, improving market design and operation and where necessary investing to enhance the system flexibility.

IEA analysis indicates that a successful renewable policy portfolio includes four main elements:

- A clear national strategy and targets that provides a stable investment climate
- An incentive system which adequately and reliably rewards investors but which can be adapted to changing market conditions and costs

- Measures to reduce unnecessary non-economic barriers to deployment (such as complex approval processes)
- An early consideration of system integration issues

Renewables have been growing strongly and costs have fallen. Many renewables no longer need high economic incentives, but they do need long-term policies that provide a predictable and reliable market and regulatory framework. The competitiveness of renewables now depends heavily on appropriate market design, and this is the current focus for policy development.

ⁱ Renewable Energy Medium Term Market report, IEA, 2013

ⁱⁱ The Power of Transformation – Wind, Sun and the Economics of Flexible Power Systems ,IEA 2014