

## **Ambitions for renewable energy in Europe's new Energy Roadmap 2050 need to be backed by massive investments in the power system**

**In preparing the Energy Roadmap 2050, the European Commission's Directorate-General Energy has asked Ecorys to assess the costs for integrating intermittent, such as wind and solar energy, in the power grid. Based on the Ecorys study, the foremost conclusion is that: the higher the (intermittent) renewable energy targets, the higher the economic costs for maintaining the stability of the power system. When the share of intermittent energy increases to 50% (or more) in the renewable energy mix, the costs are rising exponential.**

Europe's ambitions for our future energy supply are presented in the Energy Roadmap 2050. On top of the targets in the Energy & Climate Package for 2020, the new Roadmap explores scenarios for 2050 in which there is a very strong role and position for intermittent energy sources, like wind and solar power, increasing up to 80% by 2050. However, the fluctuating nature of these intermittent energy sources require a power system with more flexibility, more storage possibilities and more interconnectivity.

Ecorys has assessed, on behalf of the European Commission, the costs of integrating intermittent energy sources into Europe's power system. Production and consumption estimates over Europe from diverse existing scenario's (e.g. PRIMES, ECF, Eurelectric and IRENE-40) were matched with existing cost estimates for future grid developments like electricity storage. The study concludes that the integration of intermittent energy production in Europe will increase economic costs significantly. The higher the percentage of intermittent energy sources, the higher the cost for the power system. When the share of intermittent energy in the renewable energy mix increases to 50% or more, the costs for the power grid rise exponentially. For example, relying on 40% of intermittent energy generation would require an annual investment of at least EUR 25 billion. For a share of 60% of intermittent generation, the costs could even rise up to EUR 100 billion per year.

As 2050 is still far away, new (energy) technologies could still significantly change the picture. Nonetheless, the research clearly shows that the costs of integrating intermittent energy production cannot be ignored. Without adapting and strengthening the power system, the targets for renewable energy in the Energy Roadmap 2050 probably cannot be achieved.

For the complete report, please visit:

[http://ec.europa.eu/energy/nuclear/studies/doc/2011\\_10\\_electricity\\_supply.pdf](http://ec.europa.eu/energy/nuclear/studies/doc/2011_10_electricity_supply.pdf)

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