

Executive summary

Renewable energy (RE) is being championed in many places as a potentially significant new source of jobs and rural growth in OECD countries, and as a means of addressing environmental and energy security concerns. In most countries, governments have invested large amounts of public money to support RE development and are requiring significant quantities of RE to be sold by energy providers. But what are the economic impacts of these policies and investments? Can RE really help to develop rural economies? These are some of the questions explored by this report, which presents the results of a two-year study of the impact of RE on rural development. Drawing on case studies in 16 regions across Europe and North America, it finds that while RE indeed represents an opportunity for stimulating economic growth in host communities, it also requires a complex and flexible policy framework and a long-term strategy.

What does renewable energy offer rural areas?

The global deployment of RE has been expanding rapidly. For instance, the RE electricity sector grew by 26% between 2005 and 2010 globally and currently provides about 20% of the world's total power (including hydro-power). Rural areas attract a large portion of the investment in RE deployment. The case studies found that RE deployment can provide host communities with several benefits, including:

- ∞ **New revenue sources.** RE increases the tax base in rural communities, which can support better service provision. It can also generate extra income for landowners and land-based activities. For example, farmers and forest owners who integrate renewable energy production into their activities have diversified, increased and stabilised their income sources.
- ∞ **New job and business opportunities,** especially when a large number of actors is involved and when the RE activity is well integrated within the local economy. Although RE tends to have only a limited impact on local labour markets, it can create valuable jobs in regions where there are otherwise limited employment opportunities. While RE creates some direct jobs – such as in operating and maintaining equipment – most of the long-term jobs created are indirectly related to RE, and arise along the renewable energy supply chain (in manufacturing, specialised services and so on).
- ∞ **Innovations in products, practices and policies** in rural areas. In hosting RE, rural areas are the places where new technologies are tested, challenges first appear, and new policy approaches are trialled. Some form of innovation related to renewable energy was observed in every case study. The presence of a large number of actors in the RE industry enriches the “learning fabric” of the region. Small and medium-sized enterprises are active in finding business niches as well as clients and valuable suppliers. Even when the basic technology is imported from outside the region, local actors often adapt it to local needs and potential.

- ∞ **Capacity building and community empowerment.** As actors become more specialised and accumulate skills in the new industry, their capacity to learn and innovate is enhanced. Several rural regions have developed specific local institutions, organisations and authorities to deal with RE deployment and as a reaction to large-scale investment and top-down national policies. This dynamic has been observed both in regions where local communities fully support RE and in regions where the population is wary of the potential risks associated with RE deployment.
- ∞ **Affordable energy.** RE provides remote rural regions with the opportunity to produce their own energy (electricity and heat in particular), rather than importing conventional energy from outside. Being able to generate reliable and cheap energy can trigger economic development.

Key challenges: Putting renewable energy to work in rural areas

Renewable energy policy is expected to deliver in three areas: energy security, climate change mitigation and economic development (job creation). However, without the right policies this is not always the case and there can be significant trade-offs among these goals. For instance, large biomass heat and power plants can generate new employment opportunities in rural communities but may increase CO₂ emissions through land-use change and transportation of feedstock over relatively long distances. Similarly RE is in most instances a capital-intensive activity; the energy sector as a whole represents a small share of employment in regional economies. Small-scale installations typically source labour and equipment from international suppliers, thus limiting the community impact in terms of job creation.

On the other hand, a well-designed framework for regional policy could offer a real opportunity to reconcile policy trade-offs and identify potential complementarities among the objectives of energy security, climate change mitigation and job creation. This underlines the need for a shift in the approach to rural development in many OECD countries. This should place less emphasis on sectoral policy and subsidies in favour of policies that are place-based, grounded in local conditions and opportunities and that focus on the competitiveness of rural areas. Specific factors to bear in mind include:

- ∞ **Embed energy strategies in the local economic development strategy** so that they reflect local potentials and needs. Environmental and energy security arguments tend to be the main impetus for promoting renewable energy, and the local economic benefits tend to get overlooked.
- ∞ **Integrate RE within larger supply chains in rural economies**, such as agriculture, forestry, traditional manufacturing and green tourism.
- ∞ **Limit subsidies in both scope and duration**, and only use them to encourage RE projects that are close to being viable on the market. If subsidies are too high, they can attract rent-seeking investors, lead to high-cost energy that is only viable as long as high levels of subsidy are sustained, have a negative impact on land use and displace other activities such as agriculture and tourism.
- ∞ **Avoid imposing types of RE** on areas that are not suited to them. For example, wind power is only appropriate in certain places – more care is needed to identify those places rather than adopting policies that somewhat arbitrarily spread RE projects across national landscapes.

- ∞ **Focus on relatively mature technologies** such as heat from biomass, small scale hydro and wind. These proven technologies are not likely to experience big evolutions in technology that can leave new plants suddenly obsolete.
- ∞ **Create an integrated energy system** based on small grids able to support manufacturing activities. Policy should take into account backstop technologies for power sources that are intermittent, such as wind and solar. In several regions, the capacity to deploy RE is constrained by grid limitations yet there are no incentives to improve transmission infrastructure.
- ∞ **Recognise that RE competes with other sectors**, particularly for land. Poor siting can adversely affect local residents and disrupt tourism, which is typically a much larger source of income and employment.
- ∞ **Assess potential projects using investment criteria**, and not on the basis of short-term subsidy levels.
- ∞ **Ensure local public acceptance by ensuring clear benefits to local communities and engaging them in the process:** this is crucial as local opposition can slow construction and may make introducing future RE projects even more difficult.

There are no shortcuts to rural development. Policy makers should always take into account the overall cost of energy, and implement the least expensive energy solution that can also satisfy carbon emission reduction requirements. Only a coherent and integrated development strategy can promote growth and improve the environment.