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# SCALING UP RENEWABLE ENERGY

Renewable energy deployment delivers many benefits. It allows countries to expand and diversify their energy base, increasing energy security and reaching more people with clean, reliable power. Greater reliance on renewable energy also curbs or avoids greenhouse gas emissions and air pollution, mitigating climate change and benefitting human health. Additionally, renewable energy can drive economic growth and development, attracting investment and supporting national transitions to a clean energy future.

Thanks to advancing technologies and falling prices, especially for wind and solar technologies, global investment in renewable energy has surpassed \$300 billion per year in recent years and is projected to remain elevated for decades to come. This rapid growth in renewable energy deployment has illuminated important lessons about what it takes to transform the power sector and dramatically increase the percentage of clean electricity powering sustainable economic growth around the world.

## USAID’S APPROACH TO SCALING UP RENEWABLE ENERGY FOCUSES ON SIX KEY ACTIVITIES TAILORED TO PARTNER COUNTRY NEEDS AND CONTEXT:

### Renewable Energy Targets and Strategic Energy Planning

Clear goals and strategic plans signal political commitment and give investors confidence in the future. The strategic planning process establishes national renewable energy targets, power development and integrated resource plans, low emission development strategies (LEDS), and implementation of Nationally Determined Contributions (NDCs). Effective strategic planning and renewable energy targets must be linked to policies, measures, and investment frameworks.

**INDIA** has set an ambitious target to install 100,000 megawatts (MW) of solar PV generation capacity by 2022. India’s Karnataka state, with USAID support, launched the Solar Energy Policy, and India’s largest public distribution utility set an ambitious target to deploy 100 MW of rooftop solar annually over four years.

### Smart Incentives

Robust, transparent policies and incentives that create the necessary enabling environment for scaling of cost-effective renewable energy generation. Smart incentives set predictable “rules of the game” that improve the competitiveness of renewable energy and support transparent expectations for future profitability, which is critical for attracting financing. Well-designed incentives include periodic review and will evolve to meet changing market conditions. Examples include renewable energy quotas, subsidies, feed-in-tariffs, public guarantees and tax incentives.

**SOUTH AFRICA** set up the Renewable Energy Independent Power Producers’ Programme (RE IPPP) to attract private investment in clean energy. In four auctions since 2011, South Africa has become a leading destination for renewable investment, allocating more than 5,000 MW capacity and attracting \$5.7 billion in investment, \$1.5 billion for wind and \$4.2 billion for solar (UNEP/BNEF 2013:27).

SARAH FRETWELL / USAID

## Grid Integration

Facilitating the interconnection of grid-tied variable renewable energy, such as solar and wind, at high penetrations through increasing power system flexibility while maintaining and improving system reliability and economics. Opportunities to address grid integration challenges include investing in forecasting capabilities for variable renewable energy resources and developing supportive regulations and incentives to manage grid services and reliability.

## Renewable Energy Zones

Identifying areas of high renewable energy resource, and planning transmission accordingly, allows power system planners to harmonize transmission and generation development—supporting cost-effective development of high-quality renewable energy resources with strong developer interest.

## Competition in Procurement

Competition between power generators, through processes such as auctions, helps to find the lowest price for power, including renewable electricity. It also establishes a transparent pricing mechanism for incorporating renewable energy into the electricity market alongside the existing generation.

## Finance

Lowering the cost of clean energy financing is central to the successful execution of renewable energy scaling. This can be accomplished with instruments such as loan loss guarantees, tax incentives, and securitization, which attract public and private financing by either increasing profitability or de-risking investments.

## WHERE USAID WORKS

USAID partners in Scaling Up Renewable Energy include Afghanistan, Bangladesh, Colombia, Georgia, Ghana, India, Indonesia, Jamaica, Kazakhstan, Kenya, Pakistan, Philippines, South Africa, Vietnam. These 14 countries have added 50,000 megawatts of clean renewable power since 2010.

**PHILIPPINES** – With the support of USAID, the Philippine Department of Energy launched the 2014 Wind Energy Atlas for the Philippines and the Geospatial Toolkit, which provide critical data for planners to assess the most attractive areas for renewable energy development and analyze how those areas map to critical infrastructure, such as transmission lines and roads. USAID is currently supporting a study to model the impacts on the power sector of deploying enough renewable energy to achieve Philippine NDC goals by 2030.

**TEXAS** undertook a Competitive Renewable Energy Zones (CREZ) process to scale up wind development. The CREZ process informed the siting of new high voltage transmission lines that reduced network congestion and opened new, wind-rich areas for development. The process enhanced competition among developers and ultimately incentivized development of high-quality projects at least cost.

**MEXICO** is attracting a rising tide of clean energy investment, due to effective power market reforms and market-based auctions, designed with support from USAID. In 2014, Mexico attracted more than \$2 billion in private clean energy investment. In 2016, Mexico held its first clean energy auction and, with technical support from USAID, saw some of the world's lowest prices for solar, attracting as much as \$2.5 billion in investments for more than 2,000 MW of solar and wind technology.

**ASIA** – Through the Private Financing Advisory Network (PFAN), USAID is supporting businesses and governments in 12 Asian countries to mobilize public and private finance for clean energy investments. This effort trains clean energy project developers and entrepreneurs in developing and packaging high-quality proposals as well as matching investors with promising clean energy projects.

**CATALYZING RE INVESTMENT FUNDS** – USAID works to mobilize commercial investment in renewable energy by providing “first loss” capital to the CrossBoundary Energy’s Africa Energy Fund, which invests in distributed solar projects for commercial and industrial enterprises in sub-Saharan Africa.