

# Cleaner Gas-Burning Kilns Promote Green Development in Morocco

Artisans throughout Morocco have been using traditional kilns for centuries, and the techniques used by these artisans have been passed down through generations to produce world-renowned pottery. While these traditional kilns are inexpensive, they are fuelled by burning wood, tires, and other materials that produce significant amounts of often toxic smoke, which pollutes the air and negatively affects the health of the artisans and people in the surrounding communities. The challenge is how to preserve traditional artisan techniques, while producing pottery in innovative ways that are less harmful to the environment and public health. To this end, the Center for Development of Renewable Energy completed a gas kiln pilot project in Marrakech showing that traditional wood-fired kilns require two to four times more energy than gas kilns. This is primarily due to the reduction of thermal losses in the gas kilns and better distribution of heat. In addition, the quality of the pottery produced using gas kilns results in less breakage (because temperatures can be controlled more precisely), and the product's glaze is greatly improved. However, while gas kilns have several advantages compared to traditional ones, gas kilns cost significantly more than traditional kilns, presenting a major barrier to systematically replacing traditional kilns with modern ones.



*An artisan glazes pottery in Fez, Morocco. The MCC-funded Artisan and Fez Medina Project will assist the potters of Fez and Marrakech to meet growing demand for high-quality Moroccan pottery by investing in modern techniques and equipment.*

In response, the U.S. Government's Millennium Challenge Corporation (MCC) is funding the Artisan and Fez Medina Project as part of MCC's \$697.5 million compact with the government of Morocco. This project will stimulate economic growth by leveraging the links between the artisan and tourism sectors and increasing the value of the cultural, historic, and architectural resources of the Fez Medina. The project has several goals. First, technical training for traditional artisans will enable them to modernize their production techniques and capitalize on the

growing tourist industry and export market. Second, the project will strengthen the national system for literacy and vocational education for artisans and the general population, in particular women and girls. Third, the project will facilitate artisans' ability to access financial services from local banks or microcredit associations in order to improve their ability to invest in their trade, including, for example, by transitioning to modern kilns and participating in skills-building workshops. Fourth, the Artisan and Fez Medina Project will support the design, renovation, or reconstruction of several prominent and historically significant sites within the Fez Medina to stimulate economic growth.



*A pottery site in Fez where artisans are using techniques that burn tires, wood, and other materials that pollute the environment. Part of MCC's \$697.5 million poverty reduction grant with Morocco will help address this problem while promoting economic growth.*

The artisan production component of the project will assist the potters of Fez and Marrakech to meet growing demand for high-quality Moroccan pottery by investing in modern techniques and equipment, including cleaner burning kilns to replace traditional, high polluting, wood-burning kilns. To facilitate the acquisition of the new kilns, APP, the accountable entity implementing the MCC compact on behalf of the government of Morocco, will provide 20 percent of the kiln costs to the beneficiaries in the form of a grant, and the German fund FODEP (Fond de Dépollution Industrielle) will grant an additional 40 percent of the costs.

The beneficiaries will invest 20 percent of the total amount of the kiln's cost, and the remaining 20 percent will be financed through bank loans. MCC funding will also support a technology transfer package that will include demonstrations of modern kilns and training in the latest production techniques. This includes design, marketing, business management, and technical assistance for potters to facilitate access to financial services from local banks and microcredit associations.

In order to promote environmentally and socially sound projects in Morocco as well as in all partner countries, MCC-funded projects must adhere to MCC's Environmental Guidelines and Gender Policy, which together outline the requirements, and a process, for effective management of environmental and social impacts, including those related to resettlement, human health and safety, and the natural environment. MCC recognizes that the pursuit of sustainable economic growth and a healthy environment are interdependent, and replacing traditional kilns with modern ones in Morocco is one way to maximize this relationship and improve the quality of life for the artisans of Fez and Marrakech.