

### What is fuel switching?

Fuel switching replaces inefficient fuels with cleaner and economical alternatives, such as substituting coal or kerosene for natural gas. Complimented by modern equipment upgrades, fuel switching is a simple approach to reducing energy consumption and costs for end-users, while also curbing carbon emissions.

### What is the market for fuel switching?

- **Commercial applications:** Economic applications for fuel switching include: air conditioning, refrigeration, cogeneration and small power generation in the commercial and services sectors (e.g. offices, hotels, hospitals).
- **Industrial applications:** The flexibility and energy performance of gas is beneficial for processing industries to improve product quality, reduce waste and lower costs (e.g. glass, pharmaceuticals, food processing, electronics industries).

### What are benefits of financing fuel switching?

- **Growing market:** Rising energy prices and the drive for low carbon fuels are likely to make fuel switching increasingly desirable to end-users.
- **Long term energy cost-savings:** Projects often finance themselves over time.
- **Performance improvements:** Fuel switching can result in lower operational and maintenance costs for end-users.
- **Simple paybacks:** Typical loan paybacks are in the 2.5 to 4 year range, on average.
- **Preferential treatment:** National regulations, tariffs, or subsidies may support the switch to a cleaner fuel, thus improving the economics of fuel switching projects.
- **Energy security:** Under certain market conditions, fuel switching can enhance reliability of the energy supply.
- **Environmental impact:** Financing environmentally-friendly fuel switching can earn reputational capital with policy makers, investors and consumers due to the positive impact projects have on reducing carbon emissions.

### Key issues—and how IFC can help

- **Financing expertise:** IFC offers flexibility in finance options and deal structuring to help financial institutions (FIs) target the fuel switching market and share risks and incentives among project participants.
- **Technical expertise:** Given the technical nature of fuel switching projects, IFC can provide a technical assessment of energy needs, performance specifications, and analysis of necessary modifications to support fuel switching to its client FIs, technical intermediaries and other local entrepreneurs involved in the project.

### What are the opportunities for stakeholders?

#### FINANCIAL INSTITUTIONS

- Access to largely untapped market with good growth potential
- Potentially large customer base spanning all sectors
- Portfolio-based approach can be used to streamline projects
- Market differentiation through new business line
- FI can lend to technical intermediary who can manage and finance projects

#### END-USERS

- Energy savings make attractive investment opportunity
- Cost-savings may finance total investment over time
- Reduced operating costs, higher margins
- Increased overall competitiveness



FMS-EO-EEF-FS-036E

## What does a typical project look like?

- Financial institution extends loan to brewery to finance fuel switching
- Brewery engages technical intermediary to install new equipment and manage project
- Total investment financed in full, or in part, by energy-cost savings over time
- IFC may provide financing and technical assistance on energy efficiency best practice, project design, and implementation.

### Sample Fuel Switching Project for Brewery

#### Switching 30 % of energy need from natural gas to biogas produced from waste water treatment

Annual heat consumption	48,000,000 kWh
Annual electricity consumption	60,000,000 kWh
Fuel price (natural gas)	\$0.03/kWh
Energy cost saved	\$540,000
Investment cost	\$6,000,000
Payback period	11.1 years

### Deal Highlight: Gas Retail Project, Hungary

<b>Purpose</b>	Energy efficiency improvements in multiple households by replacing oil-fired boilers with modern gas-fired boilers
<b>Initial Portfolio Size</b>	US\$1.5 million
<b>Financial institution</b>	Leasing bank
<b>Borrower</b>	Households
<b>Average Loan Size</b>	\$1,000
<b>Simple payback</b>	5-7 years
<b>Debt repayment</b>	Energy savings; family income
<b>Sustainable activities</b>	Energy efficiency to upgrades to pipes, radiators, and boiler

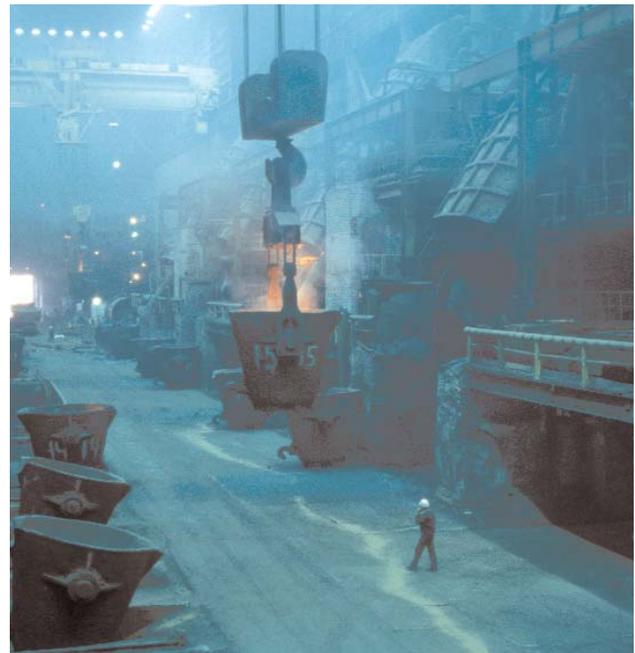
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### Energy Efficiency Finance in China

A new program in China, funded jointly by IFC and the Global Environment Facility (GEF), is promoting fuel switching from coal to natural gas in partnership with gas utilities and local banks. Gas utilities act as a "one stop shop" to help customers in the residential, commercial, industrial, and municipal sectors to prepare and finance projects. Equipment loans to end-users will be provided by partner banks supported by an IFC guarantee. The program will demonstrate how switching from coal to gas, supported by equipment upgrades, can generate long-term energy efficiencies and savings, and reduce carbon emissions.



The mission of IFC is to promote sustainable private sector investment in developing and transition countries, helping to reduce poverty and improve people's lives. Since its founding in 1956 through FY05, IFC has committed more than \$49 billion of its own funds and arranged \$24 billion in syndications for 3,319 companies in 140 developing countries. For more information, visit [www.ifc.org](http://www.ifc.org).