



GREEN LENDING

HOW TO ACCESS THE POTENTIAL ...

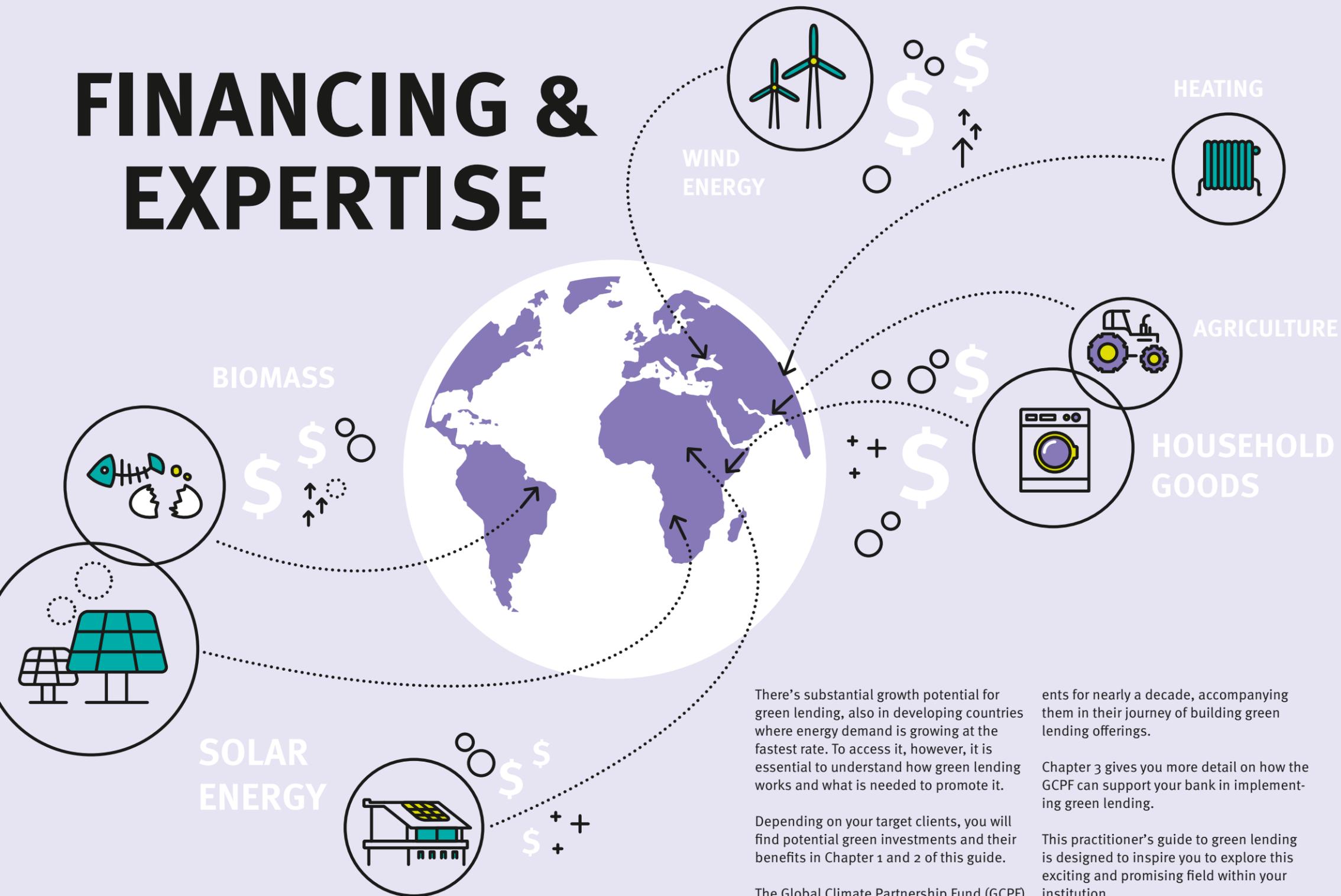
- Start thinking green – become aware of the multiple business opportunities offered by investments in energy-saving technology
- Build expertise – develop processes and internal know-how to cleverly access the green lending opportunity
- Enhance your network – know which specialist to turn to for specific technical advice and integrate it in your processes
- Conquer new territory – drive your business by actively accessing the green lending market segment
- Target returns – stick to a private market approach to ensure you make green lending a success

... AND HOW TO BENEFIT

- Become a market leader – gain a competitive advantage by accessing a dynamic new market early on
- Learn new skills – energy investments may follow a new lending rationale that can be adopted to other areas
- Expand your area of business – start financing a multitude of projects and business models
- Enhance your portfolio quality – help your clients to improve their bottom line results and reap the benefit for your portfolio
- Enjoy your reputation – actively combat climate change through your activities and win the appreciation of staff and partners



FINANCING & EXPERTISE



There's substantial growth potential for green lending, also in developing countries where energy demand is growing at the fastest rate. To access it, however, it is essential to understand how green lending works and what is needed to promote it.

Depending on your target clients, you will find potential green investments and their benefits in Chapter 1 and 2 of this guide.

The Global Climate Partnership Fund (GCPF) has worked with banks across four contin-

ents for nearly a decade, accompanying them in their journey of building green lending offerings.

Chapter 3 gives you more detail on how the GCPF can support your bank in implementing green lending.

This practitioner's guide to green lending is designed to inspire you to explore this exciting and promising field within your institution.

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“THERE IS NOT ONLY MONEY TO BE SAVED THROUGH ENERGY EFFICIENCY, THERE IS ALSO MONEY TO BE MADE.”

International Energy Agency

WHY GREEN LENDING?

Since the Paris Agreement was adopted in 2015, the fight against climate change has featured high on the agenda of leading commercial banks in the USA, Europe and Asia.

With climate issues in the spotlight, the need for green investments and the resulting new business opportunities have become clear.

Green lending has been identified as a key approach to successfully finance energy efficiency measures and renewable energy.

Financial institutions play a vital role in unlocking the potential of green entrepreneurs.

Green lending represents a great opportunity, allowing banks to achieve a combination of investment returns and sustainable impact.

In addition, by making use of green lending, financial institutions can refresh their own conventional banking portfolio to prepare for future market trends.

THE IMPORTANCE OF THE PARTNER

Strong partnerships can significantly lower the barriers to green financing – opening up green lending opportunities.

The Global Climate Partnership Fund (GCPF) is an investment company established as a public-private partnership by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) and KfW Entwicklungsbank in 2009. The Fund is managed by responsAbility Investments, a leading asset manager in the development investment field.

Working closely with domestic financial institutions, GCPF offers long-term financing and focuses on financing energy efficiency and renewable energy projects for SMEs and private households, thereby tackling the shortage of appropriate financing for low-carbon projects in the developing world.

Through its Technical Assistance Facility, GCPF provides know-how and tailored capacity-building support for partner institutions to develop their green lending portfolio and bring projects to fruition.

By doing that, the Fund is creating new business opportunities for banks, enabling them to access the enormous business potential this sector offers in addition to its positive climate impact.



www.gcpf.lu

SME AND CORPORATE

YOUR BUSINESS CLIENTS BENEFIT FROM GREEN INVESTMENTS

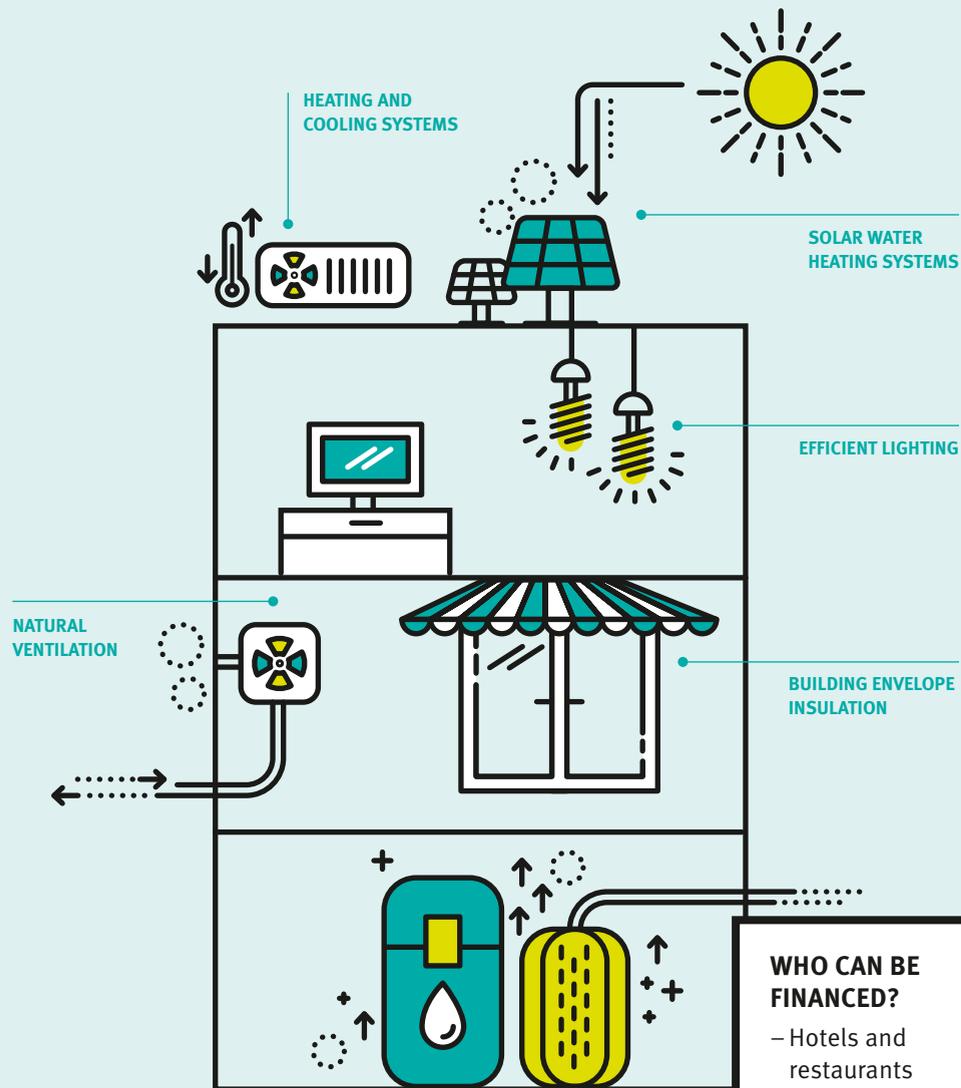
Investments in modern, energy-efficient technology improve the competitiveness of your clients' businesses. Profitability is increased – energy bills are reduced, operating and maintenance costs cut, while quality and quantity of products increase.

Savings in energy costs and lower operating and maintenance costs offset the higher purchase prices of modern equipment and technologies. For your export-oriented clients, these investments open new doors to markets that require compliance with international environmental standards.

Your clients may be significantly affected by rising energy prices and stricter environmental regulations. Furthermore, a stable energy supply is critical for your clients' businesses, and renewable energy is an alternative that has a positive impact on the environment.

All your business clients benefit from green investments, from the production sector to companies involved in trade and logistics.

GREEN BUILDINGS



WHO CAN BE FINANCED?

- Hotels and restaurants
- Office buildings
- Retail and supermarkets

WHAT CAN BE FINANCED?

- Efficient heating and cooling systems
- Building envelope insulation (walls, roofs, floors, windows)
- Natural ventilation
- Efficient lighting
- Building management systems
- Photovoltaic systems
- Solar water heating systems
- Green building certification

HOW DOES YOUR CLIENT BENEFIT?

- Reduced energy consumption and costs
- Increased comfort
- Increased productivity of staff
- Increased occupancy rates and lease income
- Increased market value of the building

In a modern economy, people spend an average of 90 % of their time in buildings. Improving a building's energy performance automatically leads to enhanced value and quality of life, as well as increased productivity of staff in the building.

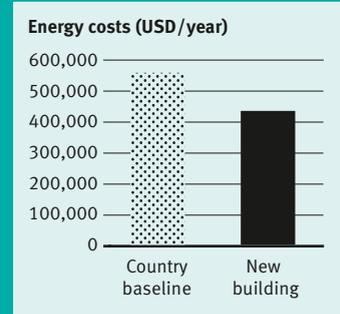
Green buildings apply environmentally responsible and resource-efficient technologies that save costs and increase comfort. This can start at the design stage for a new building or during major retrofitting works to improve the energy performance.

ASK GCPF:
Green building standards

LEED-CERTIFIED BUILDING BANK, PANAMA, 2017

INVESTMENTS

- Active façade minimizing solar gains
- Efficient lighting
- Optimized ventilation system
- Chilled-water distribution
- Efficient chillers



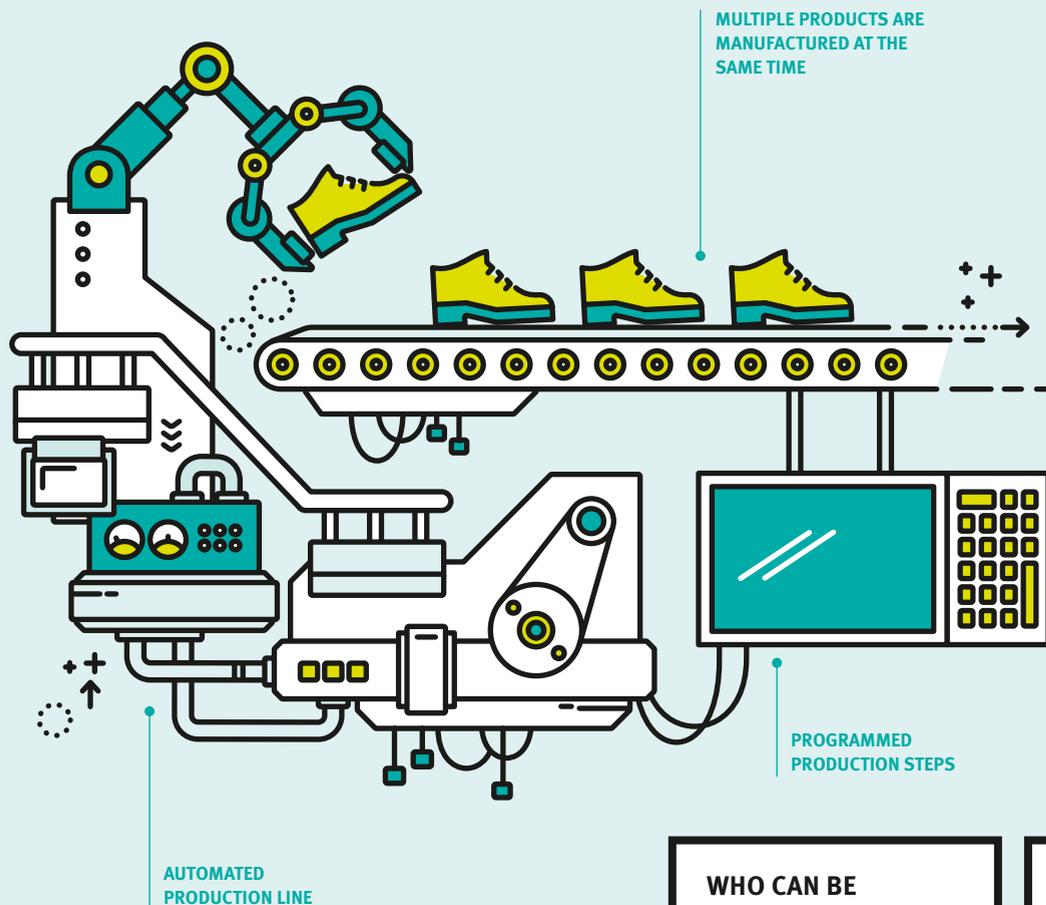
ENERGY SAVINGS PER YEAR

20%

YEARLY SAVINGS	
USD	123,000
kWh	620,000
tonnes CO ₂	220

INVESTMENT CASE

PRODUCTION EQUIPMENT



MULTIPLE PRODUCTS ARE MANUFACTURED AT THE SAME TIME

PROGRAMMED PRODUCTION STEPS

AUTOMATED PRODUCTION LINE

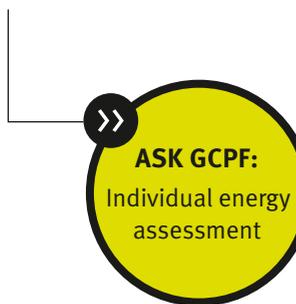
WHO CAN BE FINANCED?

- Food processors
- Textile producers
- Metal smelting and processors
- Recycling processors

Today's global market means that investing in modern equipment is essential to maintaining an edge in an increasingly competitive world. Efficient machines increase productivity and quality, reduce waste in production, energy consumption and costs.

Production processes can be streamlined with automated machines, allowing a series of steps to be combined, increasing productivity and quality of the products at the same time.

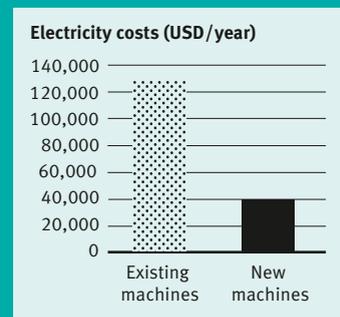
ASK GCPF:
Individual energy assessment



AUTOMATED KNITTING MACHINE KNITTING FACTORY, BANGLADESH, 2017

INVESTMENTS

- Computerized knitting machines
- Direct drive sewing machine



ENERGY SAVINGS PER YEAR

70%

YEARLY SAVINGS	
USD	90,000
kWh	900,000
CO ₂	525 tonnes

INVESTMENT CASE

HOW DOES YOUR CLIENT BENEFIT?

- Increased productivity
- Increased quality of the output
- Reduced energy consumption and costs
- Increased workforce efficiency
- Reduced usage of costly raw materials and other inputs
- Reduced unnecessary waste

WHAT CAN BE FINANCED?

- Food processing machines
- Textile production equipment
- Computer numerical control (CNC) machines

COLD CHAIN EQUIPMENT



WHO CAN BE FINANCED?

- Food and beverage processors
- Retail and supermarkets
- Hotels and restaurants
- Logistic providers

WHAT CAN BE FINANCED?

- Efficient cooling equipment
- Well-insulated cold chambers
- Closed refrigerated cabinets
- Efficient ice-production equipment
- Thermal storage

HOW DOES YOUR CLIENT BENEFIT?

- Increased quality of products
- Increased hygiene levels
- Increased food safety
- Reduced energy consumption and costs

In 2016, the total capacity of refrigerated warehouses was 600 million cubic metres, the majority of which is attributable to considerable new construction in emerging markets¹ and the increasing demand for frozen products (as household incomes grow worldwide).

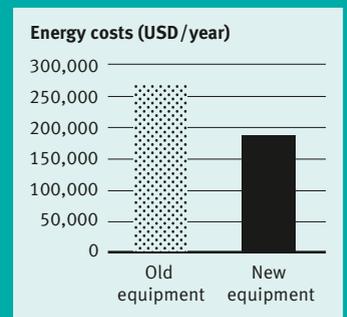
Efficient cold chain equipment forms a temperature-controlled supply chain, which reduces energy costs, reduces waste and maintains the quality and hygiene level of products. The key to maintaining the temperature while keeping costs low is to invest in well-insulated and energy-efficient equipment.

ASK GCPF:
Best practice advice

NEW COOLING EQUIPMENT FISH PROCESSING PLANT, NICARAGUA, 2016

INVESTMENTS

- Industrial fish cooking equipment
- Ice production plant
- Blast freezer
- Cold storage expansion



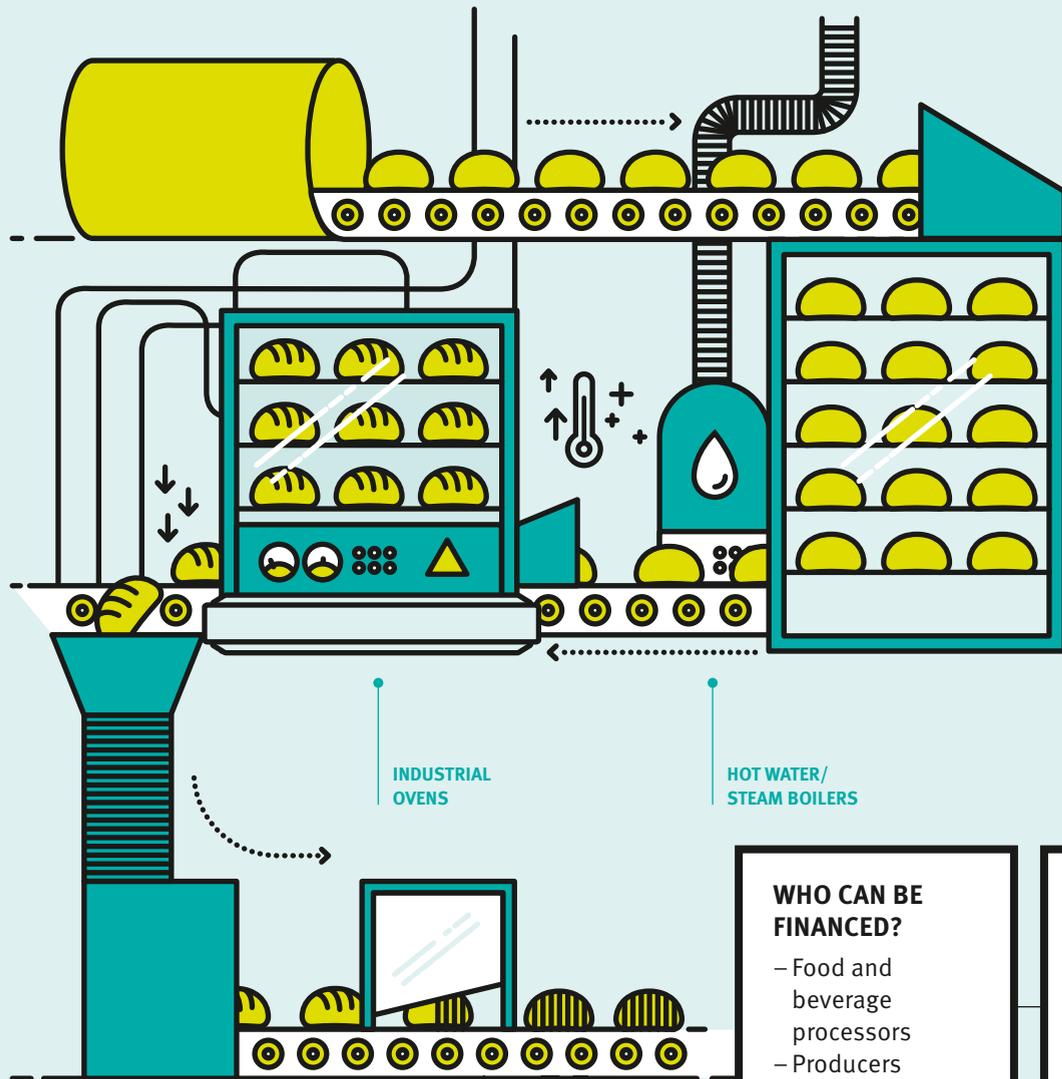
ENERGY SAVINGS PER YEAR

30%

YEARLY SAVINGS	
USD	80,000
kWh	400,000
tonnes CO ₂	140

INVESTMENT CASE

INDUSTRIAL HEAT USAGE



WHO CAN BE FINANCED?

- Food and beverage processors
- Producers

WHAT CAN BE FINANCED?

- Ovens
- Drying equipment
- Steam boilers
- Hot water boilers

HOW DOES YOUR CLIENT BENEFIT?

- Increased productivity and output
- Increased reliability and safety
- Reduced energy and fuel consumption and costs
- Potential increase in product range and quality

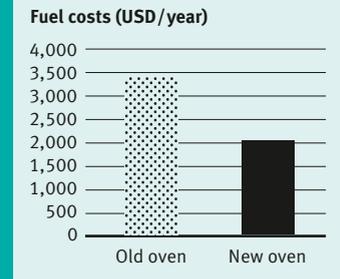
Heat generation and usage in production processes are significant cost factors for many industries; in the bakery sector, for example, heating processes account for up to 60% of energy consumption.² Ensuring that these processes are as efficient as possible has a significant impact on energy costs and productivity. Excess heat that is produced can also be recovered, making production even more energy- and cost-efficient.

ASK GCPF:
Identification of qualified suppliers

NEW OVEN BAKERY, ECUADOR, 2015

INVESTMENTS

- Bakery oven



ENERGY SAVINGS PER YEAR

40%

YEARLY SAVINGS

USD 1,350 ³
32,500 kWh
11 tonnes CO ₂

INVESTMENT CASE

TRANSPORTATION FLEETS



WHO CAN BE FINANCED?

- Logistics providers
- Passenger transport companies

WHAT CAN BE FINANCED?

- Fuel-efficient passenger vehicles
- Fuel-efficient trucks

HOW DOES YOUR CLIENT BENEFIT?

- Enabled circulation of fleet in countries with strict environmental regulations
- Reduced fuel consumption and costs
- Reduced CO₂ emissions
- Reduced exhaust emissions (e. g. NO_x and other pollutants)

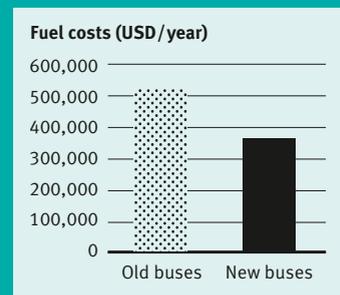
Many businesses have a fleet of vehicles for transporting goods or passengers; fuel costs are significant cost drivers. The transportation sector consumes around 30 % of final energy,⁴ of which road transport accounts for almost three quarters.⁵

Investing in fuel-efficient vehicles, or hybrid and electric options, reduces fuel costs and CO₂ emissions. For trucks that deliver goods throughout the country or region over long distances, the fuel efficiency of vehicles is especially significant.

BUS FLEET RENOVATION BUS COMPANY, COSTA RICA, 2016

INVESTMENTS

- 18 buses



ENERGY SAVINGS PER YEAR

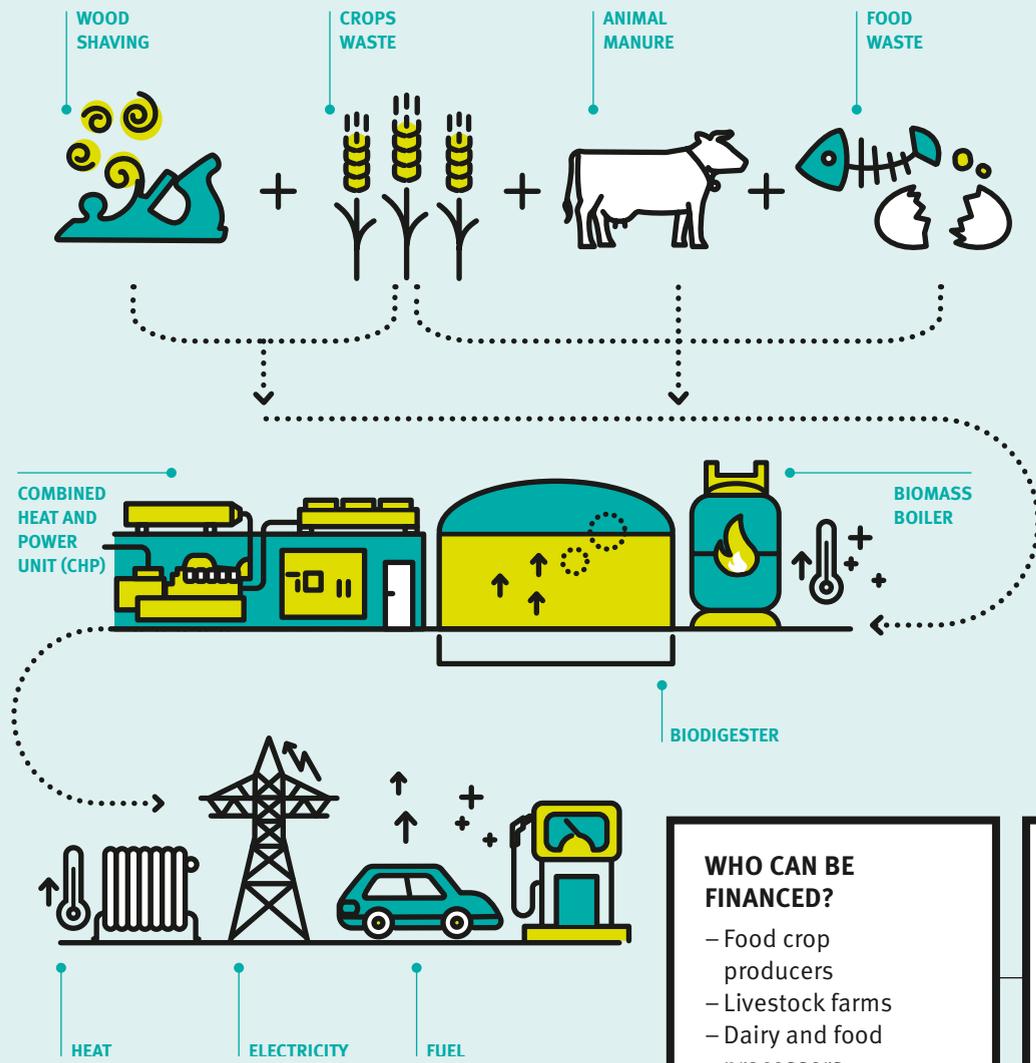
30%

YEARLY SAVINGS	
USD	156,000
l of fuel	200,000
tonnes CO ₂	500

ASK GCPF:
Expert market assessment

INVESTMENT CASE

BIOMASS



WHO CAN BE FINANCED?

- Food crop producers
- Livestock farms
- Dairy and food processors

WHAT CAN BE FINANCED?

- Biomass boilers/cogeneration plants for production of electricity and/or heat
- Biogas plants for production of electricity and/or heat

HOW DOES YOUR CLIENT BENEFIT?

- Reduced heating and electricity costs
- Reduced dependency on grid electricity and/or traditional fuels
- Additional income through feeding electricity and/or heat into the grid

Biomass energy is an increasingly vital part of the global renewable energy mix and accounts for an ever-growing share of electricity production.

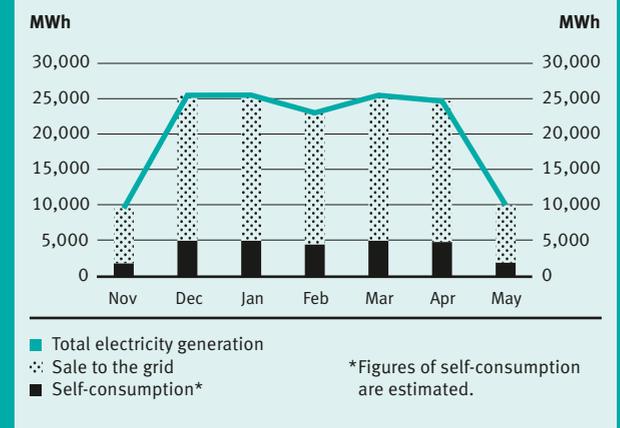
Sources of biomass include wood, bagasse, rice husks and other agricultural waste products, which can be directly burnt to produce energy. Livestock and food waste, leftover products from agriculture and production processes can be converted into biogas, which can then be used to produce heat and/or electricity. For livestock farms, producing biogas from waste solves the environmental and managerial challenge of waste disposal while reducing energy costs.

ASK GCPF:
Independent consultancy

ELECTRICITY GENERATION WITH WASTE BIOMASS SUGAR MILL, NICARAGUA, 2016

INVESTMENTS

- Bagasse cogeneration plant, using sugarcane post-processing waste



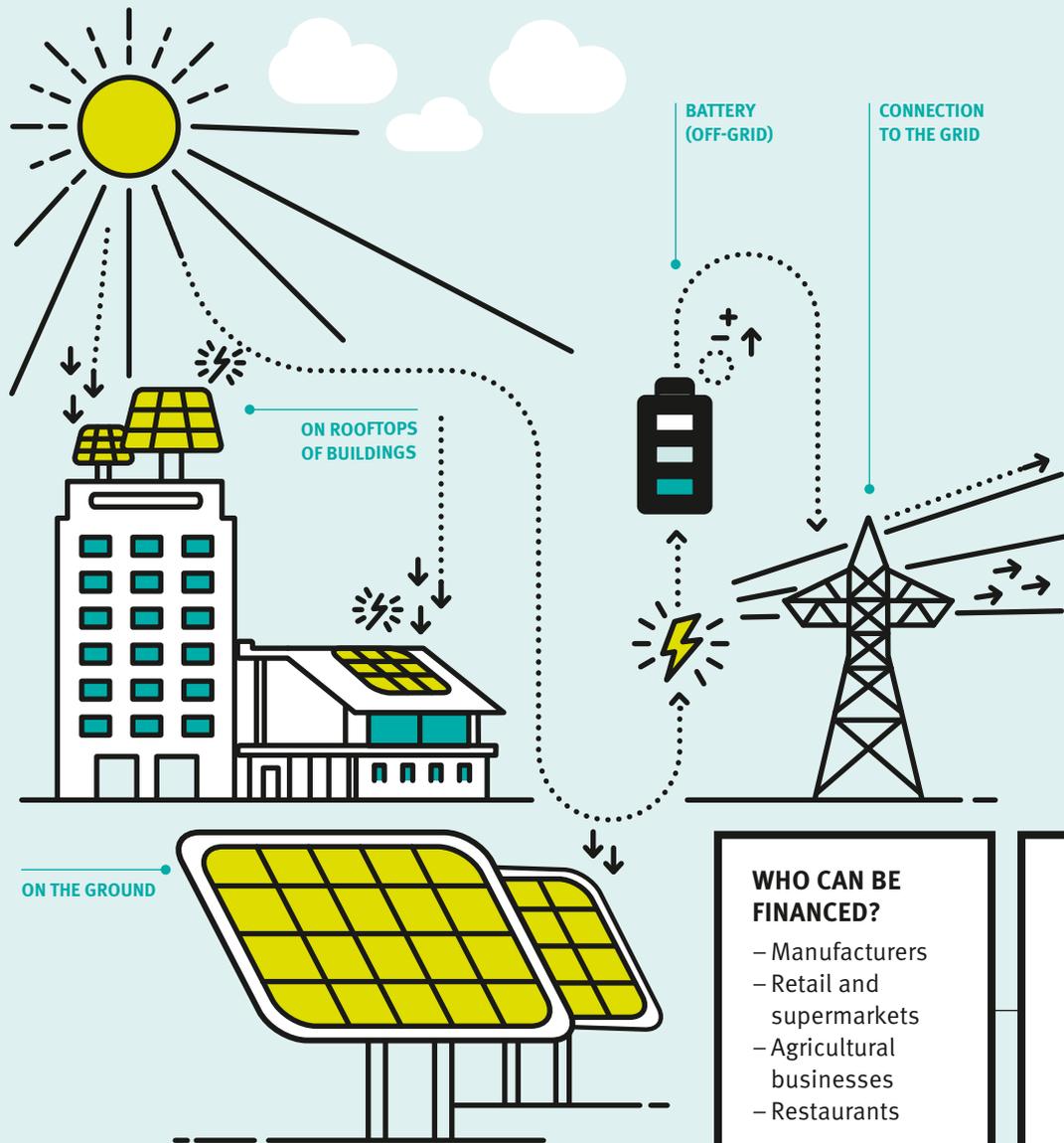
ENERGY PRODUCTION PER YEAR

144,000 MWh

YEARLY SAVINGS

144,000 MWh
47,000 tonnes CO₂

PHOTOVOLTAIC SYSTEMS



The sun is the most widespread source of renewable energy, harnessed by photovoltaic (PV) systems which capture light energy and convert it into electrical energy. Solar PV technology is simple, reliable, and makes use of the widely available solar resources.

Working as a supplement to the electricity drawn from the grid or as an alternative source of electricity, PV systems reduce dependency on grid electricity. Combined with a reduction in capital costs, solar PV systems are increasingly competitive as a source of renewable energy.

ASK GCPF:
Project risk consultancy

WHO CAN BE FINANCED?

- Manufacturers
- Retail and supermarkets
- Agricultural businesses
- Restaurants

WHAT CAN BE FINANCED?

- Rooftop photovoltaic systems
- Grid-connected photovoltaic systems
- Off-grid photovoltaic systems

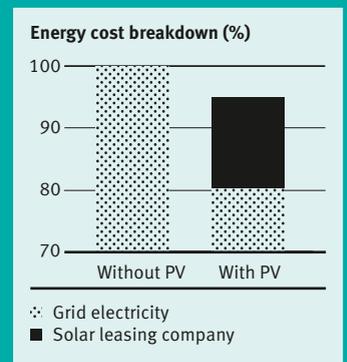
HOW DOES YOUR CLIENT BENEFIT?

- Lower electricity costs (for self-consumption PV)
- Additional income through feeding electricity into the grid
- Less noise during generation
- Reduced need for maintenance

SOLAR LEASING RESTAURANT, NICARAGUA, 2017

INVESTMENTS

- Free-of-charge 40 kW rooftop PV installation (client pays for electricity generated by PV plant)

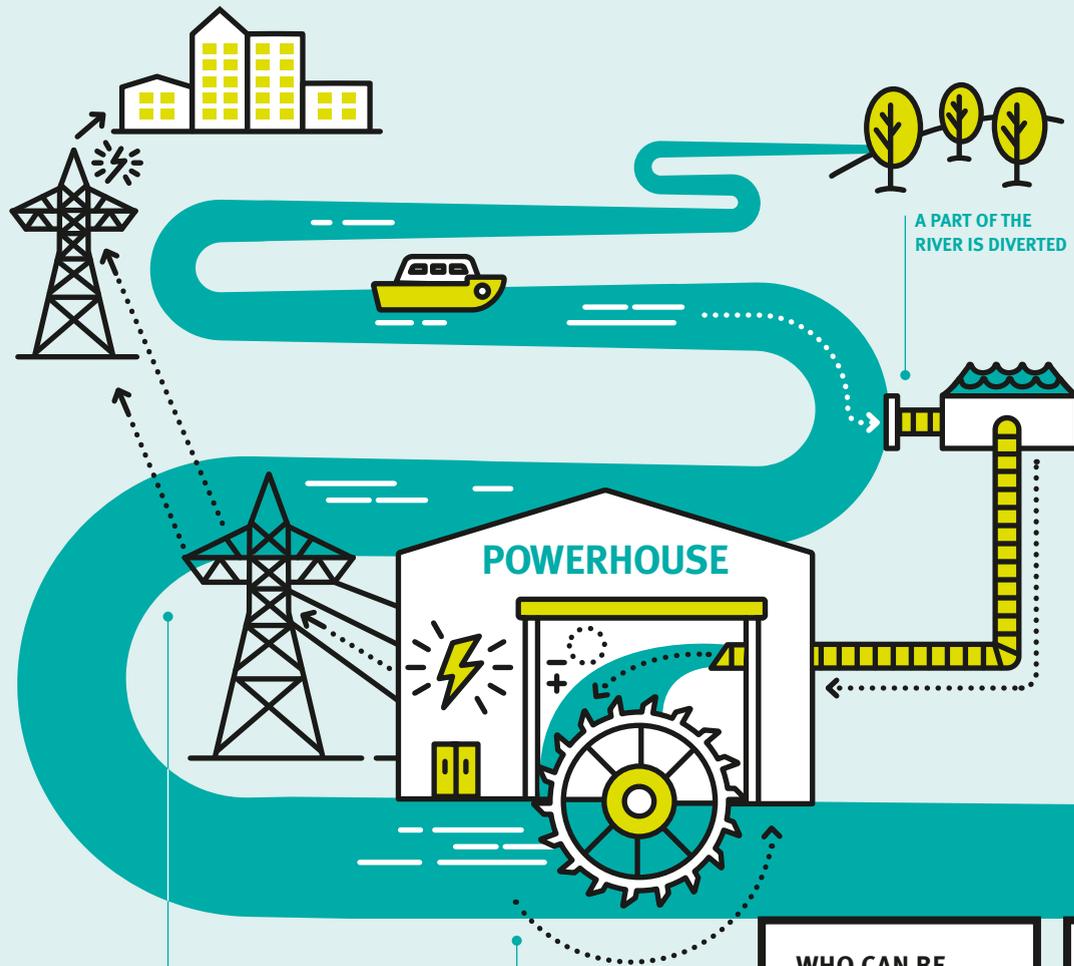


ENERGY SAVINGS PER YEAR

20%
of building energy needs

YEARLY SAVINGS	
USD	2,200
kWh	73,000
tonnes CO ₂	30

SMALL-SCALE HYDROPOWER



Across the world, hydropower provides enormous untapped potential. With a hydropower plant, electricity can be generated efficiently and in an environmentally friendly manner. The long life and high efficiencies of hydropower stations also often make them an economically feasible renewable energy power generation technology.

Small-scale hydropower plants are usually run-of-river systems, where the natural flow of the river provides the energy that generates electricity.

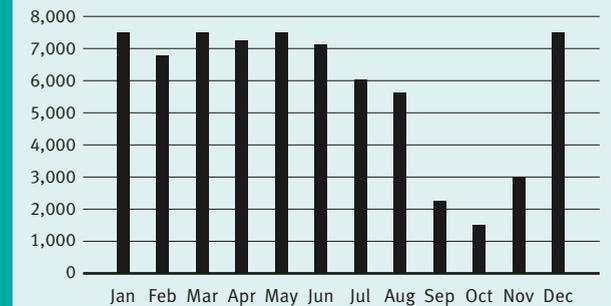
ASK GCPF:
International E&S best practices

HYDROPOWER PLANT PROJECT DEVELOPER, ECUADOR, 2017

INVESTMENTS

– 10 MW run-of-river hydropower plant

Expected energy generation (MWh)



ENERGY PRODUCTION PER YEAR

70,000 MWh

YEARLY SAVINGS

70,000 MWh
24,600 tonnes CO ₂

INVESTMENT CASE

WHO CAN BE FINANCED?

- Investors in small-scale hydropower plants

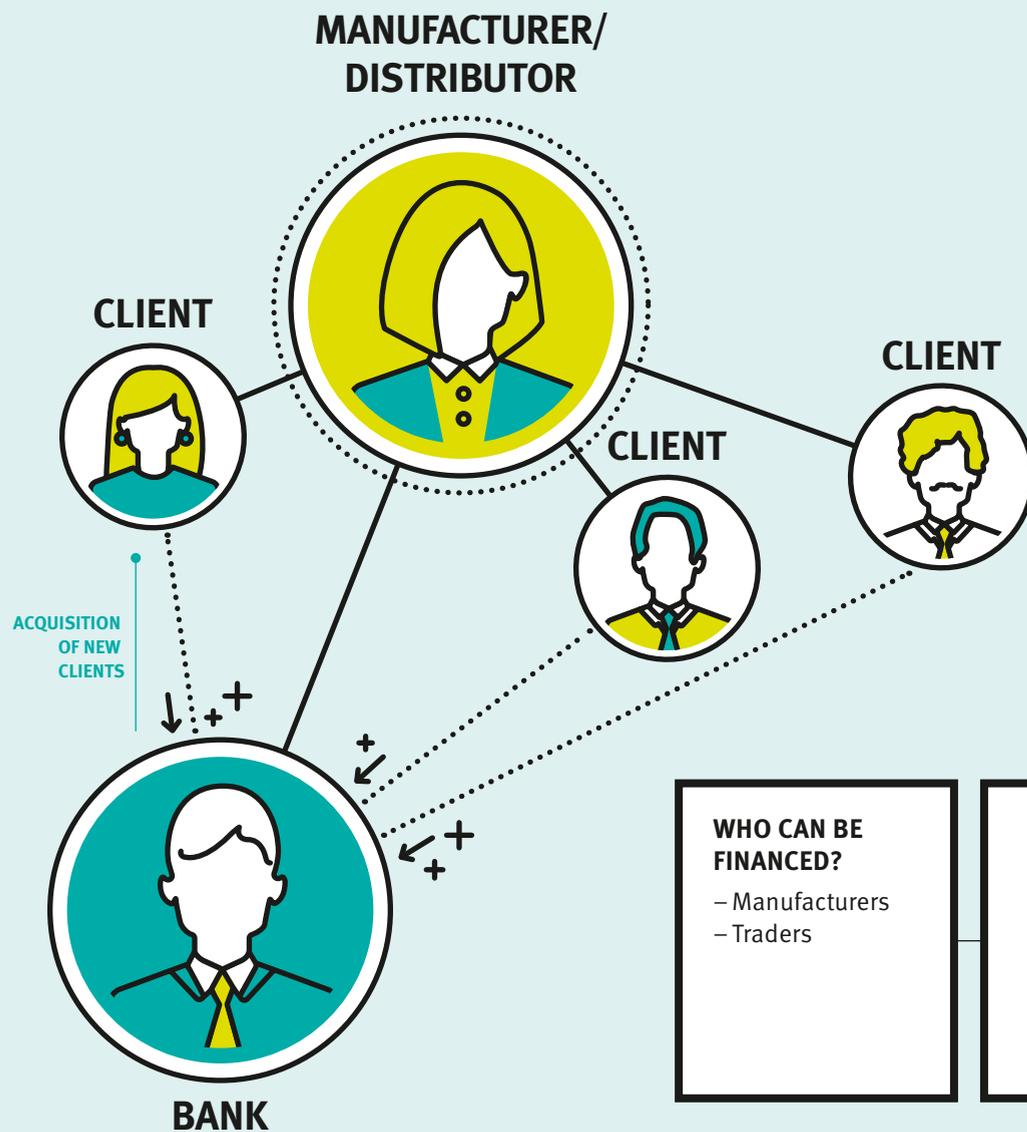
WHAT CAN BE FINANCED?

- Run-of-river hydropower plants

HOW DOES YOUR CLIENT BENEFIT?

- Income from selling energy to the grid
- Reliable electricity supply
- No pollution during power generation
- Resource-efficient power generation (in comparison to other renewable resources)

EQUIPMENT MANUFACTURING AND DISTRIBUTION



WHO CAN BE FINANCED?

- Manufacturers
- Traders

WHAT CAN BE FINANCED?

- Production and supply of
- Solar home systems
 - Efficient lighting equipment
 - Building insulation

HOW DOES YOUR CLIENT BENEFIT?

- Access to working capital
- Increased revenue through more efficient and modern product range
- Competitive advantage
- Reputation for bringing environmentally friendly technologies to the market

New potential clients, and their investments, can be reached through partnerships with suppliers of green technologies. They provide your clients access to equipment that improves their energy performance and reduces energy consumption.

Financing manufacturers and distributors of energy-efficient and renewable energy equipment promotes market growth and enlarges the network of your clients.



ASK GCPF:

Vendor finance schemes

SOLAR HOME SYSTEMS DISTRIBUTOR, MONGOLIA, 2015

INVESTMENTS

- Solar panels
- Lights
- Milking machines
- Freezers
- Televisions

ENERGY PRODUCTION PER YEAR

40,000 kWh

YEARLY SAVINGS

40,000 kWh

42 tonnes CO₂

RETAIL AND HOUSEHOLDS

GREEN INVESTMENTS HAVE A REAL IMPACT ON YOUR CLIENTS' LIVES

Investing in energy efficiency makes a significant impact for your clients in terms of increasing comfort, ease of usage and the quality of life.

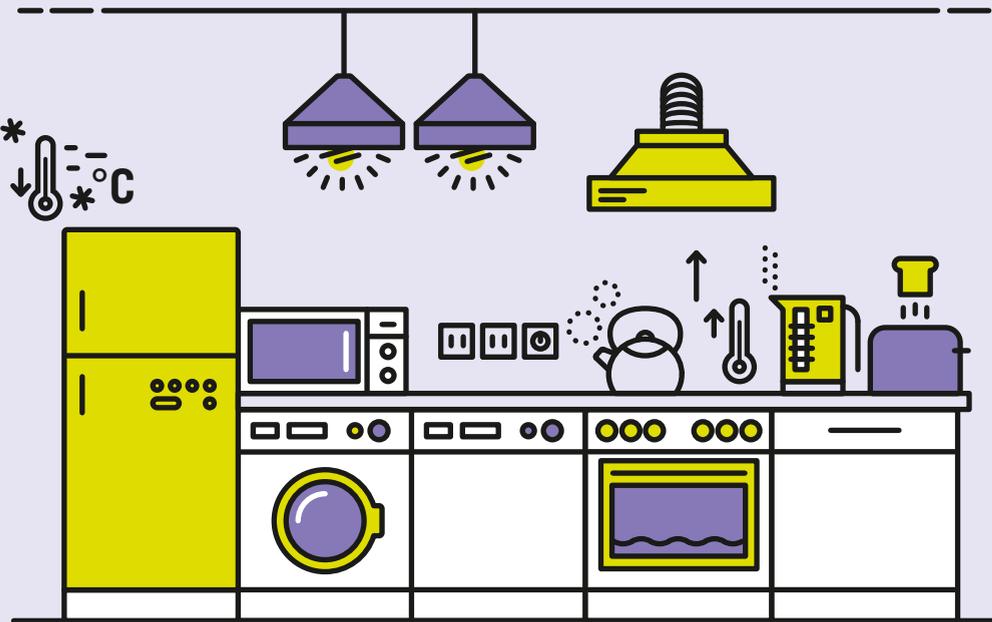
Combined with well-insulated internal spaces, energy-efficient heating and cooling systems reduce the energy consumption of buildings and improve the comfort within the home. The higher purchase prices of modern equipment are offset by energy cost savings.

As cars are often the only form of transport for many, your clients may be significantly affected by stricter environmental regulations. For example, legislation on local pollution levels may restrict the types of vehicles allowed within city boundaries.

As with private households, there is significant potential to improve efficiency in the agricultural sector, for example in energy consumption, water consumption, emissions as well as in the protection of soil.

With green investments, your private clients enjoy the advantages of an increased standard of living and reduced costs.

WHITE GOODS



REFRIGERATOR

WASHING MACHINE

DISHWASHER

OVEN

Many appliances used in the home consume electricity, gas or water, with electricity-consuming appliances accounting for almost three quarters of energy consumption.⁶ In addition to reducing energy costs, investing in energy-efficient models has a significant impact in terms of increasing comfort, ease of usage and the quality of home life.

The longer the hours of operation, the more energy and cost savings will be gained from replacing old equipment with energy-efficient models.

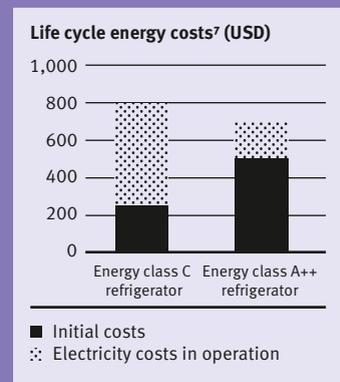
ASK GCPF:
Expert market assessment

ENERGY-EFFICIENT APPLIANCES ECUADOR, 2013 – 2017

INVESTMENTS

Over 30,000 loans provided for:

- Refrigerators
- Induction cookers
- Washing machines



ENERGY SAVINGS PER YEAR

**20% –
40%**

YEARLY SAVINGS

USD 781,000
8,400,000 kWh
3,000 tonnes CO ₂

INVESTMENT CASE

WHAT CAN BE FINANCED?

- Energy-efficient refrigerators
- Efficient washing machines
- Efficient air conditioning equipment
- Induction stoves

HOW DOES YOUR CLIENT BENEFIT?

- Increased ease of usage
- Reduced electricity consumption and costs
- Reduced water consumption and costs

INDIVIDUAL TRANSPORTATION



Cars are often the only form of transport available, and global car ownership is expected to keep increasing. Fuel-efficient and alternative forms of transport will have a significant impact in reducing fuel consumption, exhaust and CO₂ emissions.

Alternative forms of transport like hybrid and electric vehicles reduce fuel consumption, local air pollution and greenhouse gas emissions. Hybrid vehicles are approximately 30% more fuel-efficient than petrol cars,⁸ making the savings even more significant for high-intensity users such as taxi owners.

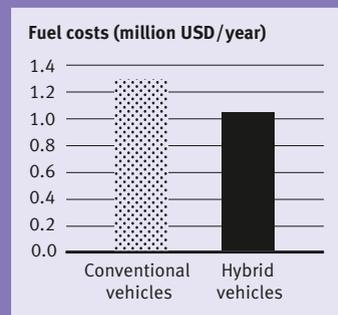
ASK GCPF:
Domestic policy trends

HYBRID VEHICLES SRI LANKA, 2014 – 2017

INVESTMENTS

Over 1,200 loans provided for:

– Hybrid vehicles



ENERGY SAVINGS PER YEAR

20%

YEARLY SAVINGS

USD 260,000 (fuel savings per year at current prices)
3,100,000 kWh
800 tonnes CO ₂

INVESTMENT CASE

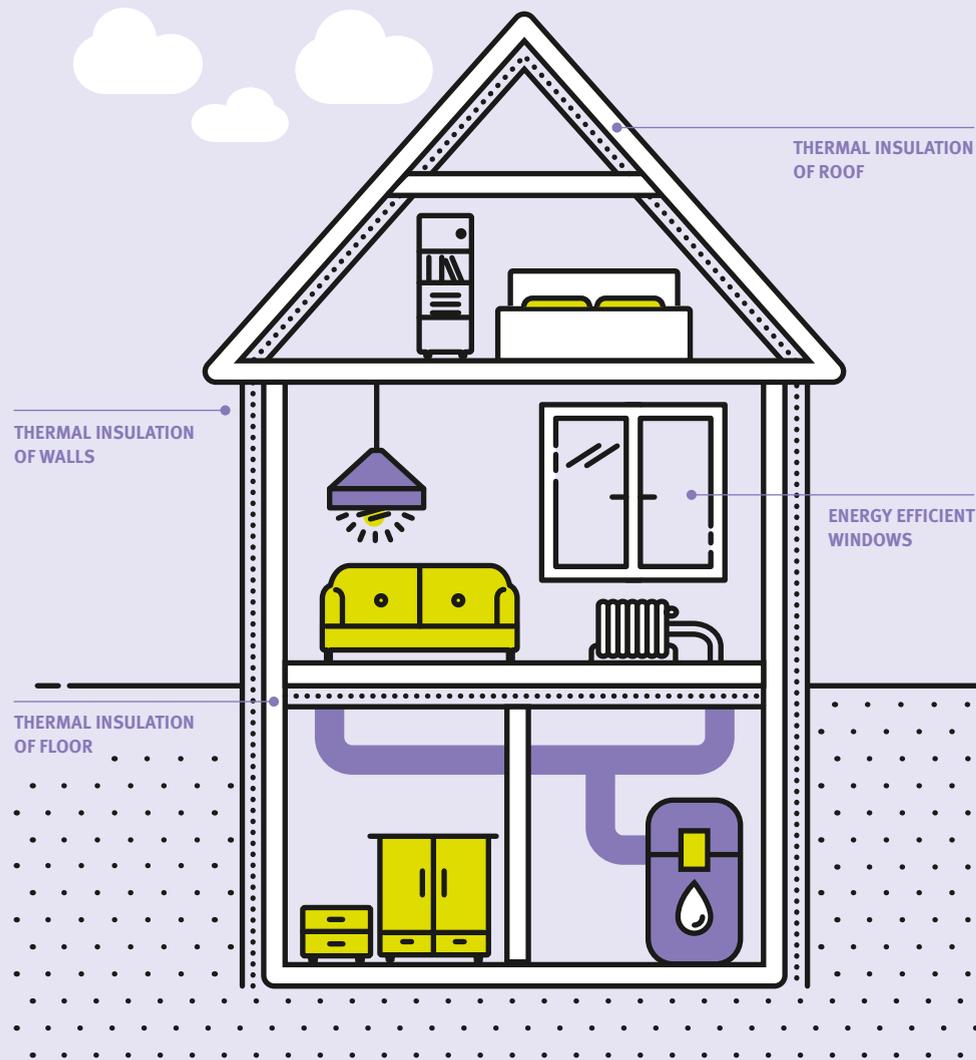
WHAT CAN BE FINANCED?

- Fuel-efficient cars
- Hybrid cars
- Electric cars
- Scooters

HOW DOES YOUR CLIENT BENEFIT?

- Reduced fuel consumption and costs
- Reduced CO₂ emissions
- Reduced local air pollution

BUILDING ENVELOPE IMPROVEMENT



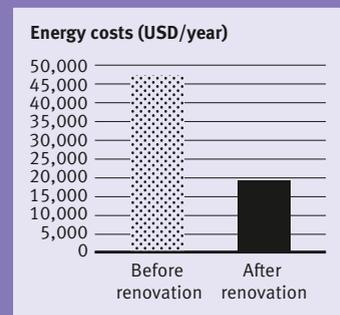
Thermal insulation is one of the most effective ways of reducing building energy consumption and maintaining a comfortable indoor environment. It helps to reduce the flow of heat in and out of the space, keeping the interior warm in the winter and cool in the summer.

Energy consumption can be reduced by more than 50% when suitable insulation is added to a non-insulated building envelope. Energy-efficient windows not only reduce heat gain through the windows while allowing light in, but also help with noise insulation, creating a comfortable living space.

ASK GCPF:
Building insulation standards

BUILDING INSULATION RETROFIT TURKEY, 2016

INVESTMENTS – Insulation retrofit



ENERGY SAVINGS PER YEAR

60%

YEARLY SAVINGS	
USD	28,400*
kWh	940,000
tonnes CO ₂	190

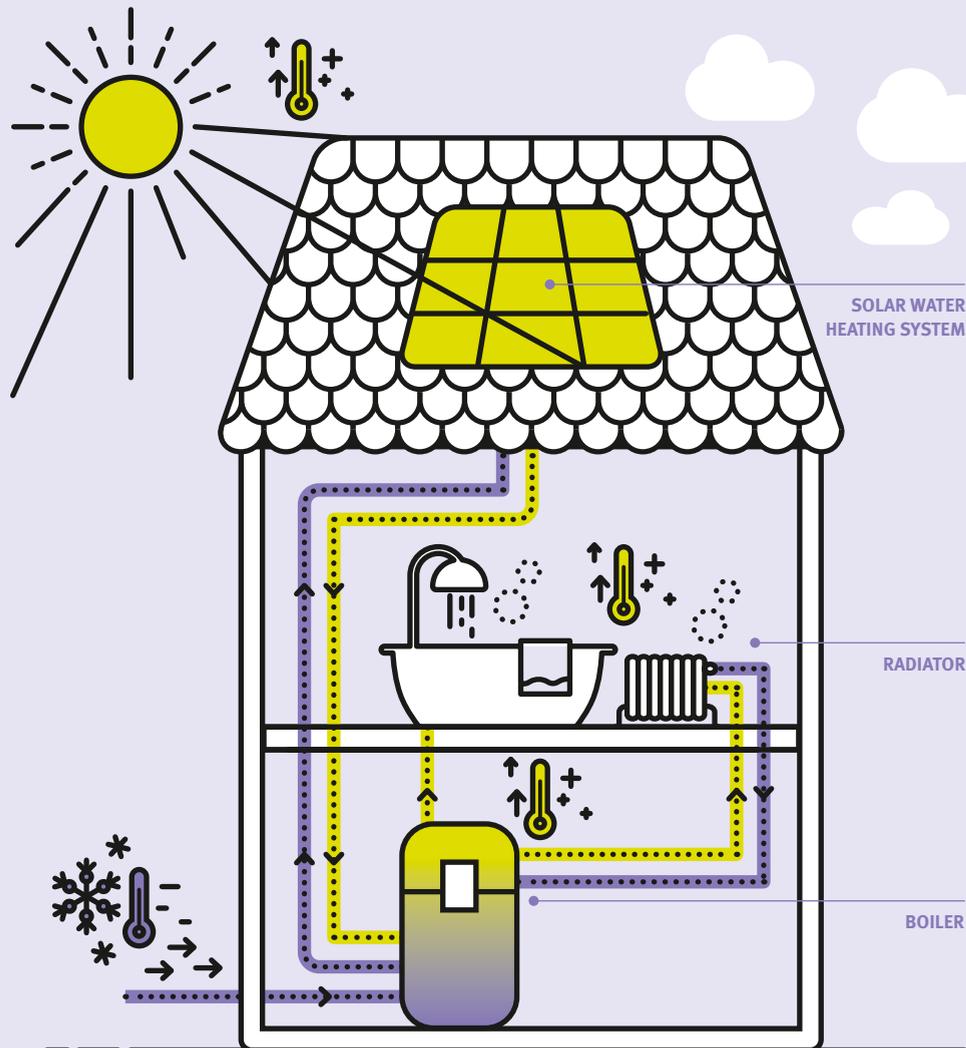
WHAT CAN BE FINANCED?

- Thermal insulation of walls, roofs, and floors
- Energy-efficient windows (double- or triple-glazed windows)

HOW DOES YOUR CLIENT BENEFIT?

- Reduced energy consumption and costs
- Reduced heating and cooling demand
- Improved sound insulation
- Enhanced security due to thickness of windows

HEATING SYSTEMS



SOLAR WATER HEATING SYSTEM

RADIATOR

BOILER

Heating systems are crucial for maintaining thermal comfort inside the home. An energy-efficient heating system improves comfort and quality of life, while keeping energy costs low.

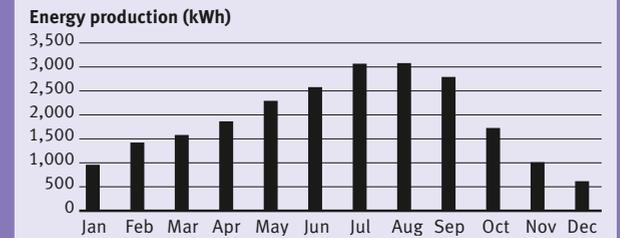
Energy efficient boilers, central heating systems and solar water heating systems are options for efficient heating of the home. Boilers can use a wide range of fuel sources, the most environmentally friendly of which are biomass (if sustainably sourced) and natural gas.

ASK GCPF:
Alternative fuel options

SOLAR THERMAL SYSTEM TURKEY, 2016

INVESTMENTS

– Solar thermal panels



ENERGY PRODUCTION PER YEAR

23,000 kWh

YEARLY SAVINGS

USD 2,300
23,000 kWh
6 tonnes CO ₂

INVESTMENT CASE

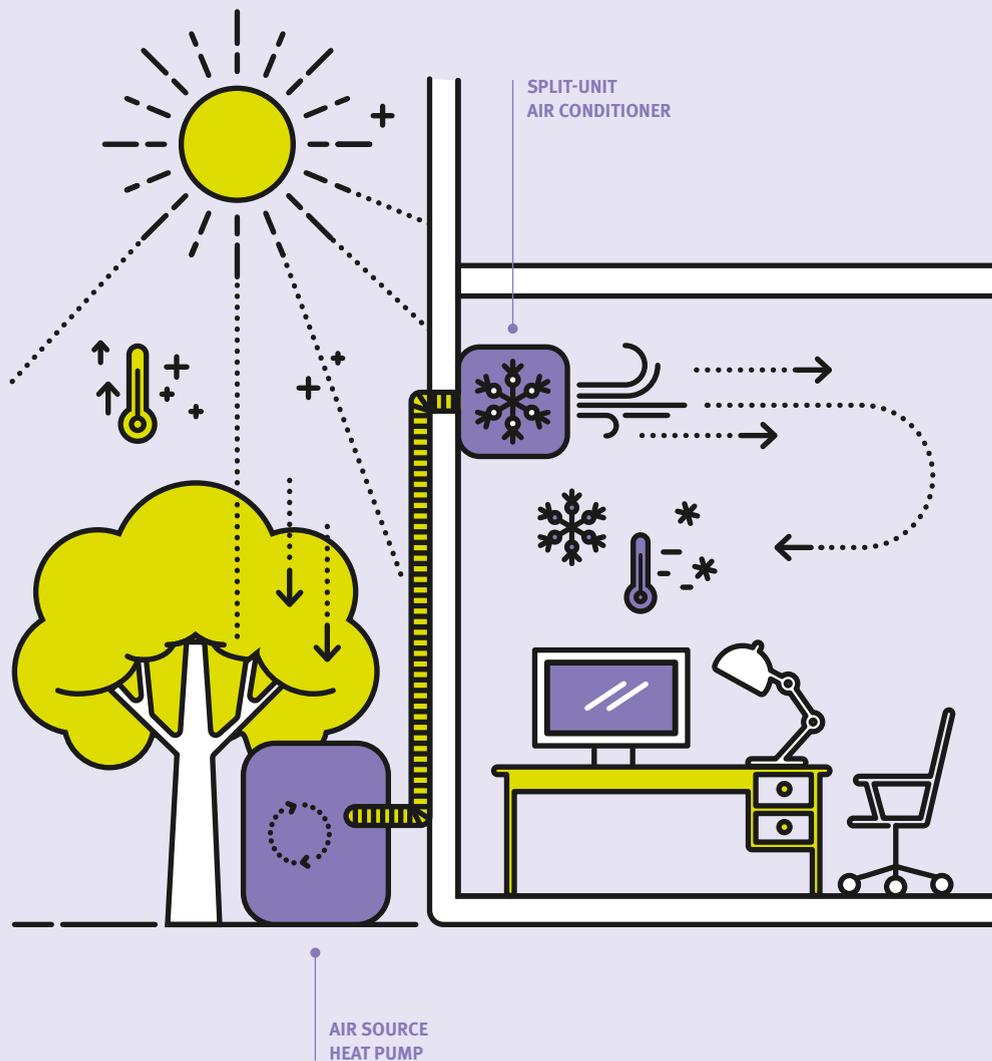
WHAT CAN BE FINANCED?

- Efficient boilers
- Condensing boilers
- Efficient heat pumps
- Low-temperature heating systems
- Solar water heating systems

HOW DOES YOUR CLIENT BENEFIT?

- Reduced energy consumption and costs
- Increased comfort in the home

COOLING SYSTEMS



During warm summers and in hot climates, cooling systems are a crucial part of home life, with the percentage of household energy consumption used for cooling at almost 40%.¹⁰ Energy-efficient cooling systems are better at converting electricity into cooling power, reducing electricity consumption and costs, while maintaining a comfortable temperature inside.

Efficient cooling systems work best together with well-insulated internal spaces to ensure that they can be comfortably and efficiently cooled.

ASK GCPF:
Tailored system selection

WHAT CAN BE FINANCED?

- Efficient heat pumps
- Efficient air conditioners
- Inverter air conditioners
- Air source heat pumps
- Ground source heat pumps

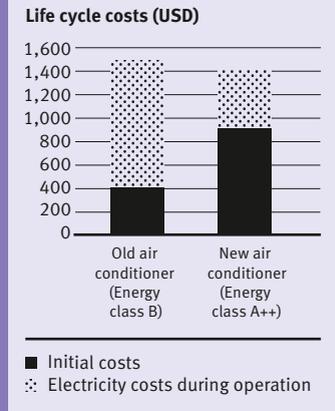
HOW DOES YOUR CLIENT BENEFIT?

- Reduced electricity consumption and costs
- Increased comfort
- Reduced emissions compared to other cooling systems

AIR CONDITIONER REPLACEMENT COSTA RICA, 2016

INVESTMENTS

- Home air conditioner



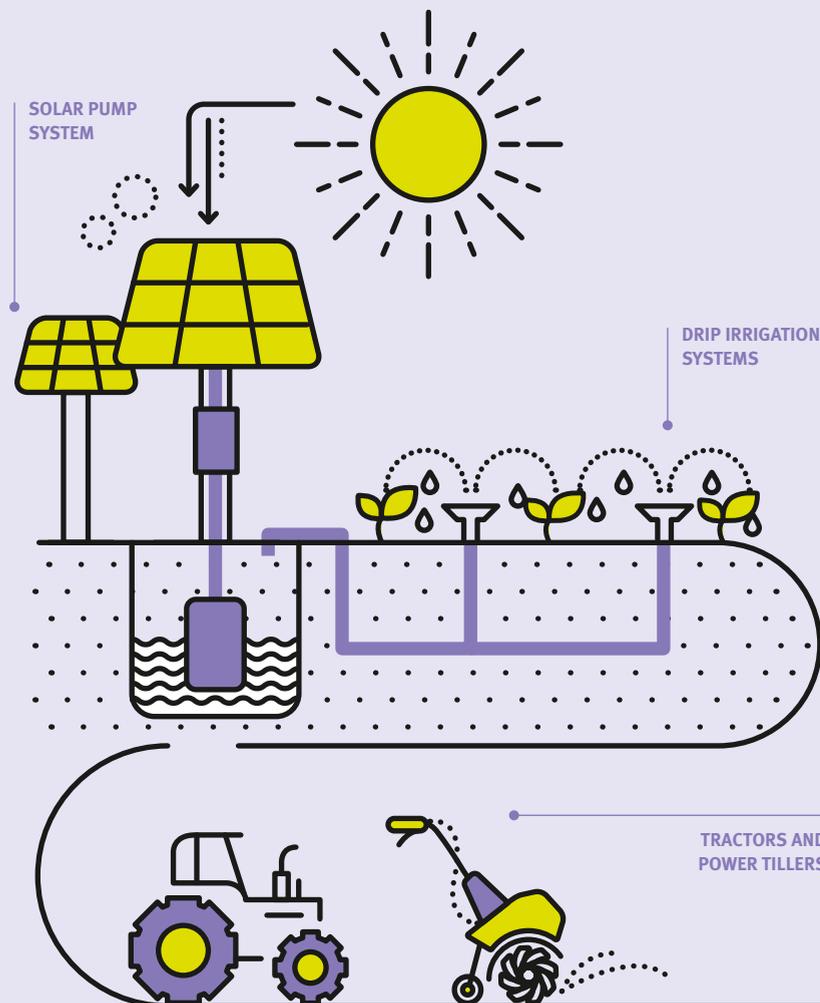
ENERGY SAVINGS PER YEAR

35 %

YEARLY SAVINGS
USD 170
840 kWh
70 kg CO ₂

INVESTMENT CASE

ENERGY-EFFICIENT AGRICULTURE



Agriculture plays a critical role in the economy of many developing countries, where more than 25% of GDP is derived from the sector.¹¹ In addition to providing food and raw materials, agriculture also provides employment opportunities to a significant percentage of the population.

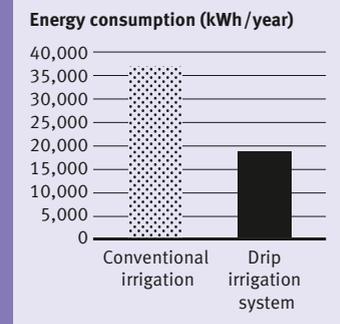
Many processes in the agricultural industry can be improved in terms of energy (fuel, electricity) consumption, water consumption, emissions, as well as in the protection of soil.

ASK GCPF:
Best practice exchange

DRIP IRRIGATION SUGARCANE PLANTATION, INDIA, 2015

INVESTMENTS

– Drip irrigation system



ENERGY SAVINGS PER YEAR

50%

YEARLY SAVINGS

18,500 kWh

17 tonnes CO₂

INVESTMENT CASE

WHAT CAN BE FINANCED?

- Efficient and low-emission tractors
- Efficient power tillers
- Drip irrigation systems
- Solar pumps

HOW DOES YOUR CLIENT BENEFIT?

- Increased productivity
- Reduced electricity and fuel consumption as well as costs
- Optimized water usage
- Reduced CO₂ emissions and pollution of air and soil

TECHNICAL ASSISTANCE

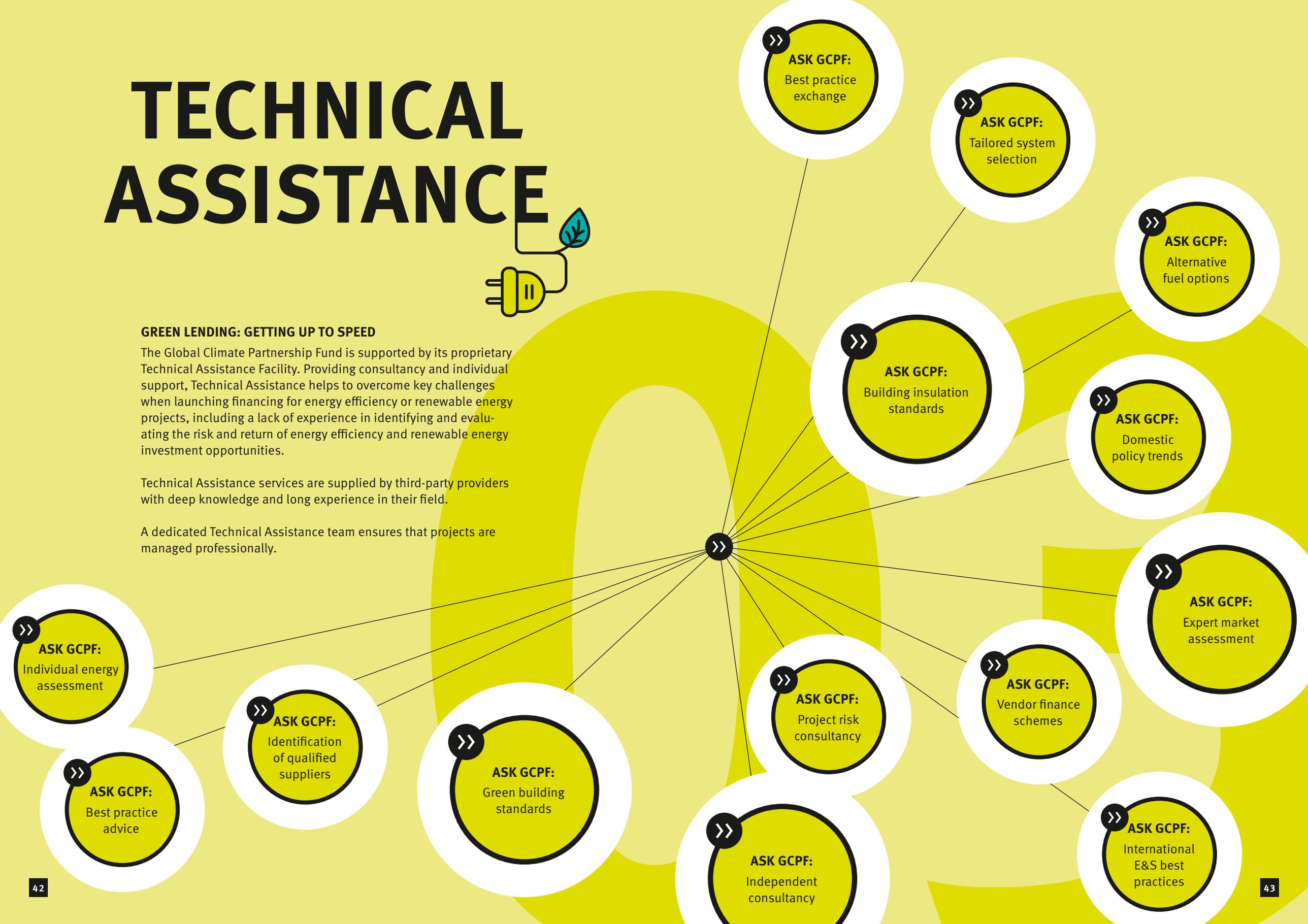


GREEN LENDING: GETTING UP TO SPEED

The Global Climate Partnership Fund is supported by its proprietary Technical Assistance Facility. Providing consultancy and individual support, Technical Assistance helps to overcome key challenges when launching financing for energy efficiency or renewable energy projects, including a lack of experience in identifying and evaluating the risk and return of energy efficiency and renewable energy investment opportunities.

Technical Assistance services are supplied by third-party providers with deep knowledge and long experience in their field.

A dedicated Technical Assistance team ensures that projects are managed professionally.



ASK GCPF:
Best practice
exchange

ASK GCPF:
Tailored system
selection

ASK GCPF:
Alternative
fuel options

ASK GCPF:
Building insulation
standards

ASK GCPF:
Domestic
policy trends

ASK GCPF:
Expert market
assessment

ASK GCPF:
Vendor finance
schemes

ASK GCPF:
International
E&S best
practices

ASK GCPF:
Independent
consultancy

ASK GCPF:
Project risk
consultancy

ASK GCPF:
Green building
standards

ASK GCPF:
Identification
of qualified
suppliers

ASK GCPF:
Best practice
advice

ASK GCPF:
Individual energy
assessment

ENERGY-EFFICIENT TRACTORS

CREATING A PRODUCT OFFERING FOR MICROFINANCE

Nearly 50 % of Cambodia's working population depend on agriculture as their major livelihood. The last years have witnessed a shift from manual labour to increasingly elaborate machinery. While this is good news for farmers, CO₂ emissions in the country are increasing.

FINANCING TRACTORS AND POWER TILLERS

To mitigate this effect, the Global Climate Partnership Fund has teamed up with the country's largest microfinance institution, PRASAC. Given its large rural client base, PRASAC Microfinance Institution Ltd. was looking to develop dedicated loan products for the financing of tractors and power tillers. The big task on hand was to ensure the feasibility of green lending in the form of microfinance.

DETERMINING ENERGY EFFICIENCY THROUGH A BASELINE STUDY

This is where the GCPF Technical Assistance came into play. Using the facility's funds, GCPF and PRASAC commissioned a baseline study to estimate potential energy savings for tractors and power tillers, comparing the energy usage of existing and new machinery. Conducted by external consultants, the baseline study was divided into a market study and subsequent field tests.

WORKING AROUND MISSING INFRASTRUCTURE

As energy expert and author of the study Sophanna Nun explains, the exercise presented special challenges: "One way to test fuel consumption for different brands, models and generations of machinery is laboratory testing. With no testing facility available in Cambodia, however, we had to look for solutions elsewhere."

CALIBRATING A MATHEMATICAL MODEL WITH FIELD TESTS

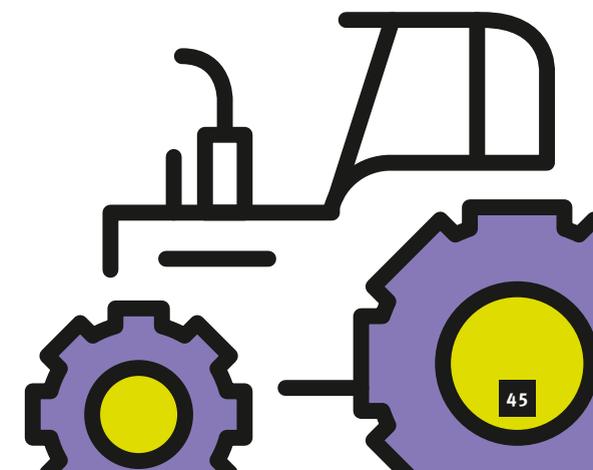
Sophanna's team opted for a mathematical model, taking into account the technology used, the age and horsepower of the equipment. "It was key to keep in mind that fuel consumption tested with one type of soil, in a certain climate and for determined tasks could not be extrapolated to different sets of conditions," Sophanna underlined.

TICKING ALL THE BOXES

GCPF demands a minimum saving of CO₂ emissions for its lending activities. Creating transparency and ensuring credibility help the GCPF's partner financial institutions to market the achieved goals and position themselves as sustainable banks in their markets.

USD 7 MILLION IN GREEN LOANS IN YEAR ONE

Pen Sovannoksitha, PRASAC's VP & Department Manager, Marketing and Communications Department, is happy with the result. "The baseline study has enabled us to disburse USD 7 million in green lending in just one year. Now, we are looking to develop additional areas of climate loans for the portfolio, working in close cooperation with GCPF and their Technical Assistance team."



BRIDGING THE GAP

MAKING EXTERNAL KNOW-HOW BANKABLE

The GCPF Technical Assistance facility commissions numerous consultancy projects in the area of green lending. They are closely accompanied by GCPF experts. Energy Specialist Marie Gustafsson talks about the art of making expert know-how accessible for financial institutions.

When you start working with a financial institution, how early in the process does Technical Assistance become part of the discussion?

Technical Assistance often happens from the very onset of discussions. Basically, we need to understand where the bank stands – in terms of clients, sectors, strategy – and where it wants to go. Based on this, we screen the market for opportunities – and then proceed to make them bankable.

What projects are consultants typically commissioned for?

At the beginning of a cooperation, we often screen the existing portfolio for green lending opportunities – replacing tractors or air cons with energy-efficient models, for example, something that can more easily happen. For banks that are more advanced in the field, consultants are tasked with developing new green lending products including full-fledged marketing strategies. Or they teach teams how to calculate risks for more complicated cases, building up know-how within the bank.

How do you choose the best experts for the job?

Based on the banks' needs, we try to find the most suitable consultant. This is normally someone who has knowledge of the local energy market, who speaks the local language and is able to communicate on this difficult topic and anchor it within the bank.

How do partner institutions and clients benefit in the long term?

The benefit for clients is obvious. Banks are often reluctant to finance complex energy projects because of the perceived risk, and even if they do, these loans are often overpriced. By enabling banks to correctly calculate risks, the client gets the chance to implement the project at an attractive price. The bank is able to access a market they may have shied away from up to now. And, obviously, the environment wins because CO₂ emissions are reduced.



“

“It’s great to see a bank evolve and access new markets thanks to successful Technical Assistance.”

Marie Gustafsson

MEET OUR EXPERT:

Marie Gustafsson
Energy Specialist

ROLE AT GCPF

- Supporting the Energy Analysis Manager to ensure eligibility of projects financed by GCPF
- Preparing reports for Fund stakeholders on CO₂ and energy savings
- Supporting institutions, external consultants and end clients in conducting energy savings analyses, identification of potentially eligible projects, and all other technical aspects

PROFESSIONAL BACKGROUND

- Four years of experience as a reinsurance analyst focusing on actuarial pricing, and managing catastrophe modelling
- Experience as a wind power project manager, leading the establishment of projects, evaluating sites and coordinating environmental impact assessments
- Master’s thesis on detection and attribution of global warming using climate models at the Federal Institute of Technology (ETH) Zurich

QUALIFICATIONS

- Master in Engineering Physics – majoring in Environment and Statistics
- Studies in Economics and French
- Certified catastrophe risk analyst

ADVANCING BEST PRACTICE IN GREEN LENDING

What our partners say

“The GCPF TA Facility has supported us with a baseline study on the energy efficiency of tractors currently purchased in Cambodia. This allows us to actively target a sustainable market niche, for our green loans, enabling them to produce more cost-efficiently.”

**Say Sony,
PRASAC, Cambodia**

“Green lending support has enabled us to commission professional energy audits, particularly for clients in the ready-made garment industry. As a result we were able to systematically build a sound portfolio of green investments within the Bangladeshi textile sector.”

**Mostofa Meer Kahled Omar,
Southeast Bank Limited, Bangladesh**

“Banco Promerica has been active in green lending since 2010 and felt we had exploited most of the conventional potential of the area. GCPF put us in touch with the best local consultant who has since worked as an extended part of the green lending department researching further market opportunities. Thanks to him we were able to take green lending to a new level.”

**Federico Chavarría,
Banco Promerica, Costa Rica**

“Working with GCPF we managed to raise awareness for the importance of managing environmental and social risks within our organization and to introduce a formalized environmental and social risk management system. This system is being deployed now and will help us identify better risk investments, develop a sound and sustainable portfolio and support the long-term development of the bank going forward.”

**Dileepa Samarasinghe,
Pan Asia Bank, Sri Lanka**

“We asked the GCPF team to participate in our most important client event. Their support enabled us to confidently showcase the potential scope of green lending and, by offering direct advice to clients, make them aware of the energy and cost saving potential of green loans for Mongolian businesses.”

**Tuul Galzagd,
XacBank, Mongolia**

REFERENCES

- 1 <http://www.gcca.org/wp-content/uploads/2016/08/SAMPLE-2016-GCCA-Global-Cold-Storage-Capacity-Report.pdf>
- 2 <https://www.carbontrust.com/media/206476/ctgo34-bakery-industrial-energy-efficiency.pdf>
- 3 Based on calculated average diesel prices (0.04147 USD/kWh), as obtained from <http://www.eppetroecuador.ec/wp-content/uploads/downloads/2017/07/ESTRUCTURA-DE-PRECIOS-AGOSTO-2017-1.pdf>, with a conversion rate of 1 gallon diesel = 38.099 kWh
- 4 <http://www.iea.org/sankey>
- 5 http://www.iiasa.ac.at/web/home/research/Flagship-Projects/Global-Energy-Assessment/GEA_Chapter9.pdf (slide 3)
- 6 <http://www.mdpi.com/1424-8220/12/5/5212/htm>
- 7 Based on calculated average household electricity tariff (0.093 USD/kWh), as obtained from <https://www.iea.org/statistics/statisticssearch/report/?year=2014&country=ECUADOR&product=ElectricityandHeat> and <http://data.un.org/Data.aspx?d=POP&f=tableCode:330>
- 8 <https://www.carsdirect.com/car-buying/fuel-economy-comparison-hybrid-vs-diesel-vs-gas>
- 9 Based on calculated average household natural gas tariff (0.03023 USD/kWh), as obtained from <http://www.turkstat.gov.tr/PreHaberBultenleri.do?id=24636>, with a conversion rate of 1 m³ natural gas = 10.557 kWh
- 10 <http://www.nea.gov.sg/corporate-functions/newsroom/news-releases/stricter-energy-performance-standards-for-air-conditioners-from-september-2016>
- 11 <http://www.fao.org/docrep/015/i2490e/i2490e01c.pdf>

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