Climate Smart Energy Solutions

Updated in August 2024

People in Need

Alliance 2015
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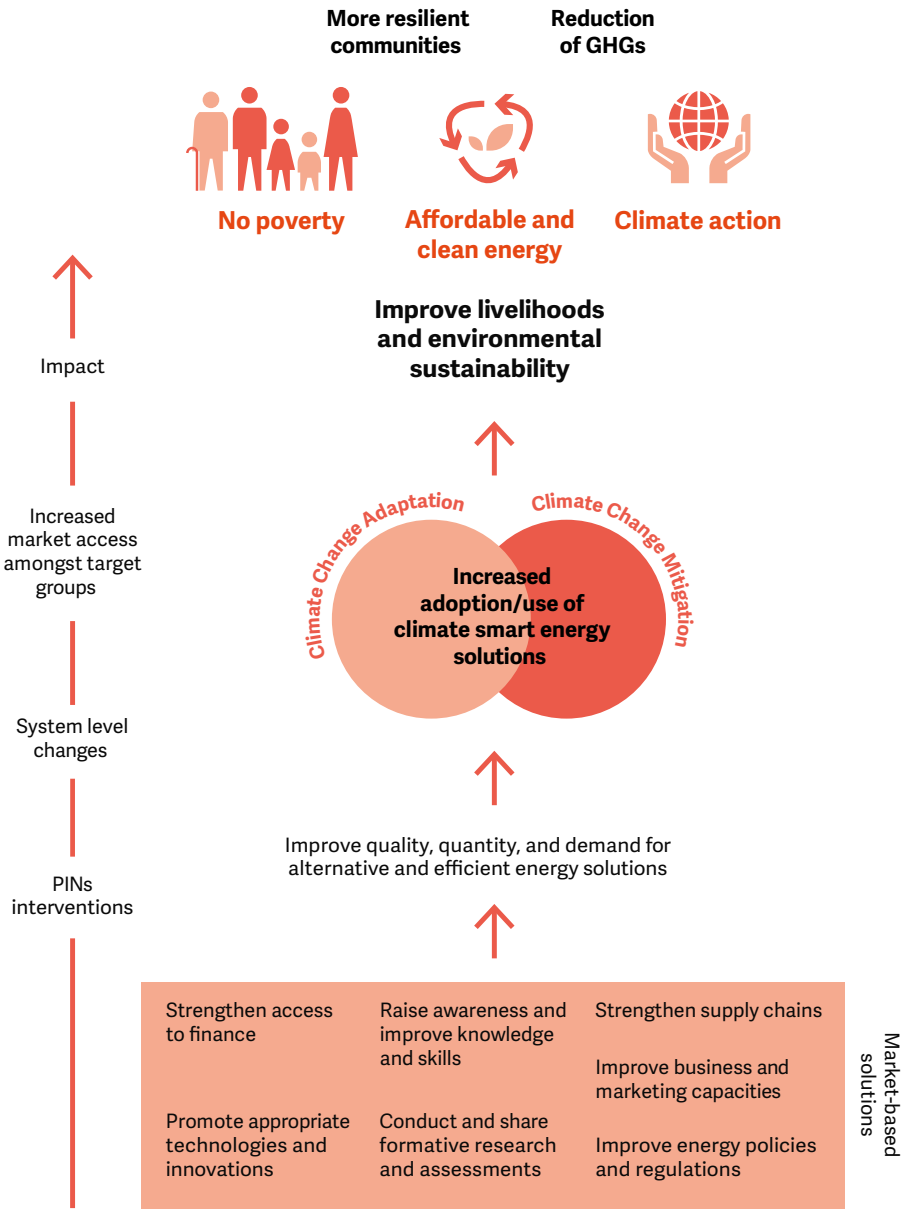
What are we trying to address?

Across the world, in 2022 around 685 million people[1] still lack access to electricity, 80% of whom in Sub-Saharan Africa. Up to 2.1 billion people still have no access to clean cooking fuels and technologies, relying instead on traditional biomass sources such as firewood and charcoal or fossil fuels such as coal, which have harmful impacts on health and drive climate change. Poorer households often have the least access to energy sources and are particularly vulnerable to energy poverty and its negative social, environmental and economic impacts. Lowering fossil and traditional biomass fuels consumption and enabling access to reliable and clean energy sources are critical preconditions to other environmental and socio-economic changes, such as decrease of air pollution and respiratory diseases, and increase of per capita GDP, gender equality and education. Energy access needs to be at the forefront of efforts to achieve sustainable economic development and climate resilience.

PIN has long lasting experience enabling access to sustainable energy markets. We support access to clean, reliable, and affordable energy services across a range of different contexts, as well as reduction of energy inputs used by applying more efficient methods and technologies. PIN's energy programming is aimed at supporting both climate change adaptation and mitigation. We see this as one of the key measures in achieving a climate-resilient and green development. Off-grid renewable energy solutions such as solar and biogas, improving energy-efficiency to reduce household costs, or low carbon and clean energy technologies for cooking are some of the solutions offered by leveraging market-based approaches. Context specific strategies are utilized which engage public and private actors, take advantage of emerging technologies and innovations, and promote new business models which are inclusive of the poor.

The following diagram is a strategic framework displaying PIN's approach.



Since 2015 to now, we have provided energy efficient and renewable energy solutions to more than 12,000 households in Mongolia, Sri Lanka, Cambodia, the Philippines, Zambia. We have also supported more than 12,000 MSMEs to increase their businesses and create a favourable market environment to the promoted products and services, increasingly raising the number of benefitting households.

1 IEA, IRENA, UNSD, World Bank, WHO. 2024. Tracking SDG 7: The Energy Progress Report. World Bank, Washington DC. © World Bank. License: Creative Commons Attribution—NonCommercial 3.0 IGO (CC BY-NC 3.0 IGO).

Examples of PIN's experience

Bosnia and Herzegovina – Energy efficiency in buildings

PIN and its partners implemented the European Union-funded 'SMARTER Finance for Families' project. The project aimed to make green loans for energy efficient construction or renovation of homes more widely available to lower income consumers in Bosnia and Herzegovina. The goal was to improve the health and financial stability of low-income households whilst also reducing carbon emissions and air pollution.

Zambia – Improving access to biogas technologies and markets, reducing traditional biomass use with fuel-saving energy solutions for cooking

PIN has been supporting market development in the household biogas sector in the Western Province – Zambia, with the support of CzDA and JOA. A total of more than 200 household biogas plants will be installed to give an alternative energy source for cooking to charcoal and firewood in "last-mile" areas, and using bio-slurry as a fertiliser can provide a hands-on climate-smart agriculture solution. This can increase resilience of smallholder farmers in a changing climate, but also becomes a contribution to climate change mitigation, as 4–5 tCO_2eq/year are saved thanks to each biodigester. As there is limited awareness of and access to biodigesters in this region, the initiatives have involved market assessments, awareness raising, demonstration sites, and working with the private sector and government partners to scale up access to the technology and have a multiplier effect on the household biogas plants installed in the area.

A JOA-funded initiative, implemented in partnership with WWF, is promoting fuel-saving energy solutions for cooking such as improved cook stoves and eco-briquettes, with the aim to reduce the fuel consumption at household level, decrease the economic and physical burden to access firewood and charcoal, lower the human pressure on forests and deforestation.

Mongolia – Addressing air pollution through energy efficiency

The Switch Off Air Pollution (SOAP) project, implemented in partnership with GERES, and supported by the EC, aimed to reduce coal consumption from Ulaanbaatar's Ger area through coordinated action in the field of energy efficiency in housing construction. Energy advice and green financing support was given for sustainable housing in Ulaanbaatar through community-based drone mapping. Thanks to the project, 3,556 tCO_2e were avoided and 1,546 households were insulated.

The CHIP initiatives aim at reducing air pollution and increasing energy efficiency in traditional gers and communities through climate smart cooking, heating, insulation, products and services solutions. From 2019, we have helped 2,200 low- and medium-income households across Mongolia with CHIP package.

Cambodia – Access to solar energy products and services for agri-businesses

PIN's EU-funded "SWITCH to Solar" project, supported also by CzDA, is aimed at improving access to solar energy for small agri-businesses and generating green employment opportunities in the Tonle Sap region. A total of 10,244 MSMEs in the agri/fishery sector benefitted of the initiative, in addition to service providers, suppliers, financial institutes, local administrations and students. Innovative solutions have been promoted under the Solar Green Energy (Cambodia) Co., Ltd. (SOGE) business strategy to design, manufacture, and distribute high-quality solar products and solutions, while also providing the necessary technical support, maintenance services, and sector-specific innovation. Two different Solar Smart Cooling Systems (SSCS) have been designed and installed by SOGE, and tested and evaluated within in two different value chains: leafy vegetables and poultry. Furthermore, Solar Dryer Domes (SDDs) have been tested in a demonstration site of the local company "Harvest the Sun (HTS)" to dry fish and improve business operations. Increased production, consumer safety, optimisation of the work force and avoided CO_2 emissions of 1.75 tCO_2e/year have been noticed. The total greenhouse gas emissions avoided at the end of the project amounted to 9,327 tCO_2e.

In the "Accelerating Sustainability in Cambodia's Agri-Food System (ASCA)" funded by the EU-SWITCH programme, the aim is also to include renewable energy solutions such as solar and biomass in the operations of rural Agri-MSMEs. Green energy solutions are designed and technical assistance given to the agri-food sector within a circular economy approach. A total of 15,000 Agri-MSMEs are expected to be targeted, and more than 4,500 tCO_2e avoided and/or removed at the end of the project.

The Philippines – Strengthening climate resilience through renewable energy

PIN's EU-funded "Renewable Energy Access for off-grid Communities and Households (REACH)" project enhanced access to disaster-resilient renewable energy solutions. This was done through promoting innovative off-grid technologies for households and rural businesses, supporting access to finance, and increasing demand for renewable energy sources. The main ambition of the project was to make solar-based solutions more accessible and economically attractive to rural farmers. A total of 2,375 households improved access to Renewable Energy technology as a result, with 237.5 tCO_2e/year emissions avoided with the replacement of kerosene lanterns by photovoltaic panels or other renewable energy sources.

Key principles of PIN's work

Supporting climate change adaptation and mitigation with innovative solutions.

Energy production is one of the main sources of greenhouse gas emissions worldwide and a key contributor to climate change. Renewable energy is growing but still many disparities exist between developed and developing countries, and still nearly two third of global energy supply comes from sources that pollute air, deplete natural resources and damage the environment. Considering the rapidly increasing global demand for energy, maximizing the use of renewable resources while increasing the efficiency of energy use is critical to global development. PIN supports technical and financial innovations that can play a key role is accelerating this switch to renewable energy and more efficient solutions that can lower the carbon emissions.

A market systems development approach which engages the private sector and works towards systems change.

PIN uses a market systems development approach that facilitates improvements in the functioning of energy market systems and increases investments and services from the private sector in more fragile and remote environments. Rather than trying to tackle problems directly, PIN adopts a systems approach focused on first understanding the complex systems we aim to influence through our work, and then working closely to support the relevant market, government and civil society actors to drive inclusive change. This approach is taken to maximise the sustainability and impact of our interventions, and ensure that any changes we contribute to can continue occurring after our projects end.

An adaptive management approach.

The complexity and unpredictability of the systems that PIN aims to influence in its energy work requires the use of a flexible and adaptive management approach to programming. This involves a strong focus on monitoring and results measurement, learning, piloting interventions before scaling them up, and adjusting activities, budgets, business models and partnerships as needed to maximise the long-term impacts of our interventions.

In-depth analysis to understand and address root causes.

We must understand the causes of energy poverty or people's reliance on high carbon and inefficient solutions (for example: are there financial barriers? Are potential users aware of the benefits of the technologies? Are different solutions available, accessible and easy to use?) in order to design effective interventions. The design of PIN's projects uses formative research, market analysis, gender and social inclusion analysis, and effective behavioural change strategies to understand and address practical barriers that prevent people from using energy solutions that can improve their lives.

Supporting vulnerable and 'last mile' users.

Decentralized and off-grid renewable energy solutions, such as solar PV, wind, hydro, or biomass, provide important opportunities to quickly connect communities with reliable and zero-carbon energy. Low-carbon solutions may increase the efficiency of energy use and reduce carbon emissions. PIN 's energy programming improves the functioning and inclusiveness of rural energy markets and knowledge on easy-to-apply solutions, so that more households are able to gain long-term access to such solutions. PIN's role is key in expanding the reach of private sector suppliers and service providers, increase the knowledge on the readily applicable solutions, and leverage a change in people's behaviour.

People in Need

People in Need is a Czech non-governmental organisation (NGO) that has been providing aid in troubled regions and supporting human rights since 1992. Since then, People in Need has grown into one of the largest NGOs in Central Europe. Today, its work focuses on humanitarian and development aid, advocacy for human rights and democratic freedom, field social work, and education, awareness and information.

peopleinneed.net

Alliance 2015

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Alliance2015 is a strategic partnership of seven European NGOs engaged in humanitarian and development activities. Besides People in Need (Czech Republic), Alliance2015 members are ACTED (France), Cesvi (Italy), Concern Worldwide (Ireland), HELVETAS Swiss Intercooperation (Switzerland), Welthungerhilfe (Germany) and Ayuda en Acción (Spain).

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