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# Climate Smart Energy Solutions

Supporting climate-resilient development  
by improving sustainable access to clean  
energy products and services



Alliance 2015

towards the eradication of poverty

## WHAT ARE WE TRYING TO ADDRESS?

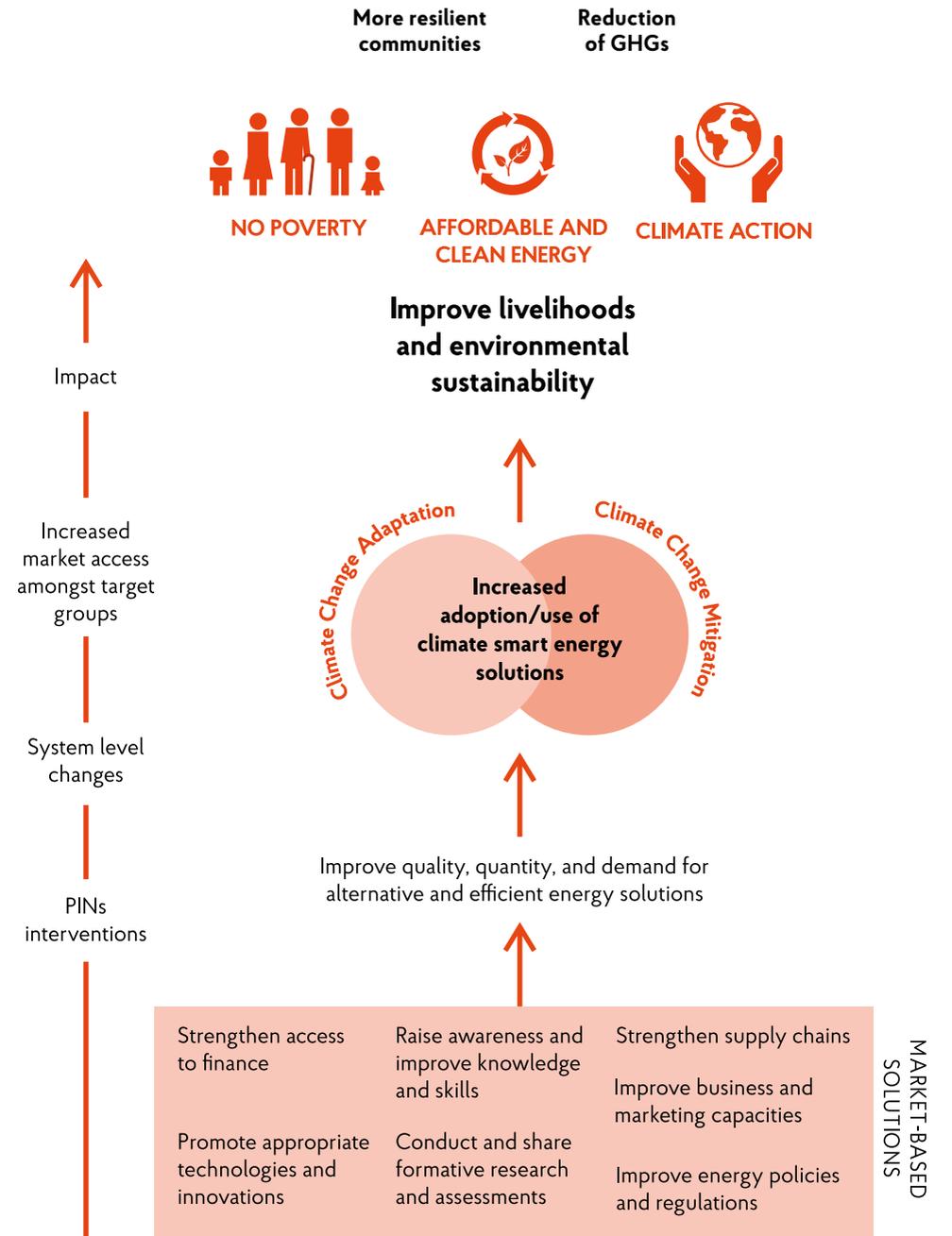
Across the world, around 840 million people (World Bank, 2020) still lack access to electricity. Almost 3 billion lack access to modern fuels for cooking and heating, relying instead on traditional biomass sources such as firewood, which have harmful impacts on health (World Bank, 2020). Poorer households often have the least access to energy sources and are particularly vulnerable to energy poverty and its negative social, environmental and economic impacts. Enabling access to reliable and clean energy sources is a critical precondition to other social and economic changes. For example, increases in per capita energy consumption are closely correlated with increases in per capita GDP, gender equality and educational outcomes. Energy access needs to be at the forefront of efforts to achieve sustainable economic development and climate resilience.

PIN has more than a decade of experience enabling access to sustainable energy markets. We support access to clean, reliable, and affordable energy services across a range of different contexts, and see this as one of the key measures in achieving climate resilient development. 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. PIN's energy programming is aimed at supporting both mitigation of and adaptation to the effects of climate change.

The following diagram is a strategic framework displaying PINs approach.



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## EXAMPLES OF PIN'S EXPERIENCE

### Mongolia – Addressing air pollution through energy efficiency

PIN's 'Sheep Wool Building Materials' project developed sustainable supply chains for locally sourced, environmentally-friendly sheep wool insulation. This was done through targeted support to pastoralist producers and SMEs, establishing national product standards, and supporting value chain actors to improve demand for their products. The project contributed to sheep wool insulation covering 52,500 square metres of home space. The Switch Off Air Pollution (SOAP), implemented in partnership with GERES, aims to reduce coal consumption from Ulaanbaatar's Ger area through coordinated action in the field of energy efficiency in housing construction.



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### Bosnia and Herzegovina

#### – Energy efficiency in buildings

PIN and its partners have been implementing the European Union-funded 'SMARTER Finance for Families' project. The project aims 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 is 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

PIN has been supporting market development in the domestic biogas sector in Western Province, Zambia. As there is limited awareness and access to biogas in this region, the project has involved market assessments, awareness raising, demonstration sites, and working with private sector and government partners to develop a strategy to scale up access to the technology.



### Sri Lanka – Improving access to biogas technologies

PIN worked to create an enabling environment for the large-scale dissemination of biogas as a reliable source of clean energy for SMEs and households in Sri Lanka. The project strengthened biogas-related services (design, construction, after sales services, appliances) amongst 67 SMEs, supported 4 financing institutions to develop loan schemes to support the construction of biogas units, enabled more than 1000 households and 35 hotels to adopt biogas, and contributed to a reduction of emissions of over 2504 tons of CO2 per year.

### Cambodia – Sustainable access to energy products and services for households and businesses

PIN implemented the 'Developing Sustainable, Market-driven Biogas and Solar Energy Solutions for Rural Communities' project in Cambodia that facilitated access to renewable sources of energy for more than 38,000 rural villagers and contributed to a cumulative reduction of 236,276 tons of CO2 (annually). This has involved improving the supply and marketing capacities of suppliers, increasing distribution channels in remote 'last-mile' areas, strengthening the provision of after sales services, and promoting the sale and usage of new and innovative products (e.g. flood proof and easily installable plastic biogas models). Pay as you go finance models were supported as a way to accelerate the adoption of solar home systems.

PIN's EU-funded 'SWITCH to Solar' project is aimed at improving access to solar energy for small agri-businesses and generate green employment opportunities in the Tonle Sap region.



### The Philippines – Strengthening climate resilience through renewable energy

PIN's Renewable Energy Access for off-grid Communities and Households (REACH) project is working to enhance access to disaster-resilient renewable energy solutions. This is being done through promoting innovative off-grid technologies for households and rural businesses; supporting access to finance, and increasing demand for renewable energy sources.

## KEY PRINCIPLES OF PIN'S WORK



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### 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. While the use of renewable energy has increased, nearly three quarters of global energy supply still 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 in accelerating this switch to renewable energy.

### 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 (for example: are their financial barriers? Are potential users aware of the benefits of the technologies?) in order to design effective interventions. The design of PIN's projects uses formative research, market 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 underserved 'last mile' populations.

Decentralized and off-grid renewable energy solutions, such as solar PV, wind, hydro, or biomass, provide important opportunities to quickly connect communities with reliable energy. Due to technology improvements, the prices for such solutions are now competitive with the price of grid connectivity. Despite these opportunities, the needs for off-grid energy products and services is much greater than the speed that existing companies are able to expand. PIN's energy programming improves the functioning and inclusiveness of rural energy markets, 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 beyond urban areas to the communities that need them most.

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