



Schneider Electric: Business innovation enabling access to energy

Summary

Schneider Electric, a global specialist in energy management with operations in more than 100 countries, has an ambitious agenda aimed at increasing access to clean, reliable and affordable energy.



The company has most notably set up a so-called Business, Innovation & People at the Base of the Pyramid program (BipBop), which addresses three key issues to provide sustainable access to electricity: the lack of appropriate equipment through the development of an adequate offer; the lack of financial resources available for innovative energy entrepreneurs through funding; and the skills and expertise shortage through technical and business training.

This WBCSD case study introduces BipBoP's work, and provides examples of its application in practice.

Context

Access to energy not only improves quality of life, but also facilitates access to healthcare, education and development for those who need it the most.

However, when it comes to access to energy, the world is paradoxical and unfair. Two billion people on the planet are energy privileged and don't even question the idea of having energy. On the other hand, 1.3 billion still do not have reliable access to electricity. They are at the so-called 'Base of the Pyramid' (BoP). The sources of electricity to which they have access are polluting and expensive – flashlights, kerosene, and wood-based biomass.

What is even more unfair is that the poorest people pay the most for energy. Urban inhabitants in Beijing, Paris, and New York spend from 6 to 8 per cent of their revenue on energy, whereas a person living in an off-grid, remote village in India will spend up to 30 per cent for a poor quality of service.

While populations without access to electricity are mainly located in Asia (55%) and sub-Saharan Africa (40%), promoting access to energy is a worldwide challenge.

About Schneider Electric

As a global specialist in energy management with operations in more than 100 countries, Schneider Electric offers integrated solutions across multiple market segments, including

leadership positions in energy and infrastructure, industrial processes, building automation, and data centers/networks, as well as a broad presence in residential applications.

Focused on making energysafe, reliable, and efficient, the company's 110,000 plus employees achieved sales of EUR 19.6 billion in 2010, through an active commitment to help individuals and organizations make the most of their energy.

Schneider Electric & access to energy

Schneider Electric has consistently been committed to playing an active role in the economic development of the communities in which it has a presence. This is reflected in the substantial involvement of the Group and its employees in supporting communities, particularly by helping people to enter the workforce, and through its access to energy program.

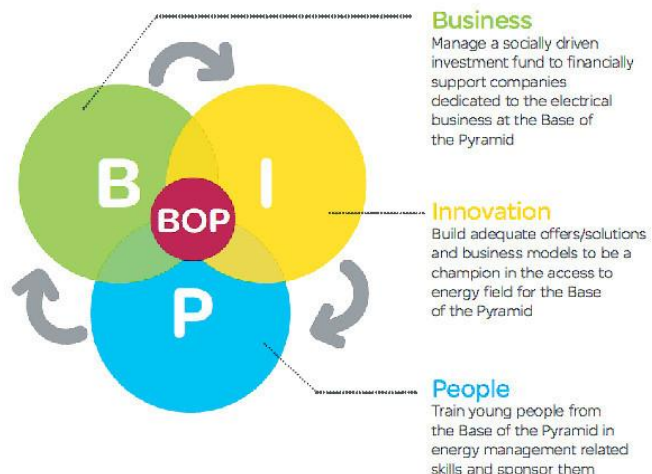
Schneider Electric has most notably set up the so-called **BipBop program** (shorthand for Business, Innovation & People at the Base of the Pyramid), which is managed by the company's Sustainable Development department.

By investing in communities and stakeholders at the BoP, Schneider Electric addresses three key issues around the challenges of providing sustainable access to energy:

- Developing an adequate and cost-effective offer to address the lack of appropriate equipment;
- Enabling access to funding sources for innovative energy entrepreneurs;
- Strengthening skills and expertise through technical and business training.

Accordingly, the key elements of the BipBop program are:

- 'Business' – creation of an investment fund to support energy entrepreneurs for BoP markets;
- 'Innovation' – developing appropriate solutions to be a key supplier for BoP markets;
- 'People' – training young people in electrical skills.



The program is actively supported by Schneider Electric's staff in the field. These employees constitute a network of key contact people for the design, management and monitoring of projects. They contribute their knowledge of the local context (e.g., on how civil society, local authorities, and private sector are organized locally) and guarantee that the project is aligned with local needs. Their presence is of crucial importance for the long-term oversight of projects in which Schneider Electric is involved.

An online [BipBop interactive map](#) provides a comprehensive overview on the company's worldwide projects.

BipBop “Business”: Energy Access Fund

In July 2009, Schneider Electric announced the creation of a global sustainable venture capital fund called Schneider Electric Energy Access (SEEA), with an initial capital of EUR 3 million. As of December 31, 2010, the following amounts were managed by the fund:

- EUR 3,000,000 in capital invested by Schneider Electric;
- EUR 500,000 in capital invested by Schneider Energie Sicav Solidaire, a sustainable mutual fund.



The fund encompasses SEISAS, la Caisse des Dépôts et Consignations, and the Schneider Energie corporate mutual fund. Furthermore, 1,500 Group employees backed the BipBop project by investing some EUR 2 million. Created with the support of the Crédit Coopératif and Phi Trust, the fund's mission is to support the development of entrepreneurial initiatives worldwide aimed at enabling access to energy for the poorest segments of the population. It will invest in specific projects such as:

- Helping jobless individuals create businesses in electricity;
- Promoting the development of businesses that provide access to energy in rural or suburban areas in developing countries;
- Supporting the deployment of innovative energy access solutions that use renewable energies for the BoP.

The fund has set the ambitious objective of supporting 500 businesses to set up their activities in the electricity sector by the end of 2011. Furthermore, the fund operates in line with strict management rules, aimed at protecting the assets, such as:

- Always investing in partnerships with recognized players;
- Never taking a majority shareholding;
- Always ensuring sustained company support (help develop a business plan, technical advice, etc.) to deliver the optimum social efficacy while minimizing risk.

	International projects	France projects
Sectoral specialization	<ul style="list-style-type: none"> • Access to energy sector • Sector of micro finance institutions funding the abovementioned sector • Social impact of businesses funded 	<ul style="list-style-type: none"> • Job creation through electrical profession
Geographical targets	<ul style="list-style-type: none"> • Asia and Africa priority 	
Methodological rules	<ul style="list-style-type: none"> • Always through joint investment • Minority participation only • Always provide technical and management support 	<ul style="list-style-type: none"> • Always through joint investment • Minority participation only • Always provide technical and management support
Investment type	<ul style="list-style-type: none"> • Own funds • Ticket size: 100 to 400 thousand euros • Investment period: 5 to 7 years 	<ul style="list-style-type: none"> • Own funds • Ticket size: 200 to 1000 thousand euros • Investment period: 3 to 5 years

BipBop “Business” in practice: Investment in Kayor Rural Energy (Senegal)

Kayor Rural Energy (KAYER) is a company with a social and environmental vocation that develops renewable energy solutions, primarily for rural environments. Its vision is to ease universal access to development-friendly clean energy. In line with Senegal’s rural electrification policy, KAYER aims at improving living and production conditions, favoring the growth of the local economic fabric and promoting renewable energy to benefit sustainable development. Its activities provide solar photovoltaic technology for an individual’s domestic or productive use. The social enterprise provides a service ranging between infrastructure dimensioning and maintenance. It eases access to products and services through microfinance institution partnership development.



Through its access to energy investment fund, Schneider Electric has acquired shares in KAYER, in a partnership with International Solidarity for Development and Investment (SIDI)). The deal was signed at the World Social Forum in Dakar in February 2011 during a workshop on financing renewable energy.

BipBop “Innovation”: Products and solutions

Innovation for Schneider Electric starts with the local needs and the socio-economic context of those with little or no access to electricity. With this in mind, chief aims of its offers and economic models are to:

- Meet the energy needs of residents to support sustainable economic and social activity;
- Include and involve local populations in projects to guarantee their sustainability in the long term.

The company sets out to provide comprehensive energy access solutions that support revenue-generating entrepreneurial activities, foster community services or meet domestic needs. Products and solutions are specifically developed to meet a range of both individual and community needs across the energy chain, from lighting systems and battery charging stations to decentralized small power plants and water pumping systems.

BipBop “Innovation” in practice: In-Diya

In February 2010, Schneider Electric launched In-Diya, a highly energy efficient light emitting diode (LED) based lighting system, to provide lighting to people in India living with no or unreliable electricity.

In-Diya is a specially-designed system that can operate on main supply and/or solar panels. At the time of launch, it was the only available LED-based lighting system which can fully illuminate a typical rural house and provide 8 to 15 hours backup.

The In-Diya system was developed at the company's dedicated Indian R&D centre. It has been designed to offer high-quality products at an affordable price. It is available in nine different variants with the basic model with 45 LEDs priced at 550 Rupees (approximately EUR 8.5). This model is powered by an external chargeable battery which can be rented from a battery-charging station managed by a local entrepreneur. Other models can be charged through solar panels.



The high-end variant is a 90-LED Solar Home Lighting System which is compatible with the electrical grid and is priced at 4500 rupees (approximately EUR 70).

In addition to using Schneider Electric's network of more than 400 distribution partners, the company will partner with a range of microfinance institutions, NGOs and specially-trained entrepreneurs to reach customers in rural areas.

Schneider Electric took on all upfront capital costs concerning marketing and socio-economic studies, R&D of a dedicated product, and the creation of a production line and distribution channels.



In-Diya's production started in January 2010, and has a maximum capacity of 10,000 units per month. Its geographical reach has been extended beyond India, with LED-based lamps now also being distributed in South-East Asian countries as well as in Africa. New models will also be developed by the R&D teams, and costs will be further reduced. A portable LED light variant will be designed and a mobile charging solution will be added to them.

BipBop "Innovation" in practice: Developing distributed energy solutions for remote communities in Vietnam

Despite Vietnam's highly developed national power grid, nearly two million inhabitants still do not have access to power.

This is the case, for example, of Village 61 in Quang Binh province, a mountainous region in central Vietnam. Before the Schneider Electric initiative, the remote village's 150 residents had no access to electricity and subsisted mainly on crop and animal farming, almost completely cut off from the rest of the country.

Today, every household is connected to a renewable energy mini-grid that supplies electricity generated by a micro solar power plant developed by Schneider Electric, leveraging its expertise in smart energy management solutions.

In March 2010, Schneider Electric Vietnam and Cambodia, the Schneider Electric Foundation and the NGO Energy Assistance France (EAF), created by GDF Suez, signed a partnership agreement with the province of Quang Binh to develop renewable energy infrastructure in Vietnam.

The pilot project, requiring an initial investment of nearly €120,000, got off the ground in July 2010 and was officially inaugurated in December 2010. The system, which operates continuously, generates 11 kW of electricity and supplies energy to the 35 houses in the village, the local school, the neighboring military base and a customs office.

The electricity used by Village 61 has been billed at a cost that is sufficient to pay back the initial investment within 15 years as well as helping to finance future projects in Quang Binh province.



The possibility of replicating the model in 72 other villages is currently being explored. In preparation, residents are already receiving training and education on energy management. Schneider Electric has also created jobs in the region and introduced an interest-free microcredit system that allows villagers to acquire electrical goods to benefit further from access to electricity.

BipBop “People”: Trainings

The key challenge of training in the electrical sector is to provide those at the BoP with the skills and know-how to be able to sell and maintain energy access services and, in time, to set up their own businesses.

Schneider Electric’s strategy for the training of disadvantaged groups at the base of the pyramid includes three key priorities:

- Relatively short, undemanding and widely accessible basic training;
- Training leading to qualifications in partnership with local Ministries of Education;
- Training for trainers to support effective and quality roll-out of training down the line.

Training is funded by the Schneider Electric Foundation and is always deployed in partnership with local and national or international organizations (NGOs, government, etc.).

In 2010, Schneider Electric completed 15 training projects in 11 countries. The projects are funded by the Schneider Electric Foundation, in the framework of its commitment to support the professional integration of young people.

BipBop “People” in practice: Vocational training to basic electricity skills in 23 training centers in India

In early 2009, Schneider Electric India launched the Electrician’s Training Program (ETP) with the objective of developing skilled manpower in the electrical sector in India. With a helping hand from the NGO Aide et Action, the GMR Varalakshmi Foundation, the institute Don Bosco Tech and IMC Society of Government ITI, 23 training centers are now providing vocational training in electricity for residential and commercial buildings to underprivileged young people throughout India. The students who benefit from this

training are essentially unemployed school and college drop-outs. Courses are focused on house and building wiring, electrical safety or solar based home lighting systems installation.

In addition to the technical training, the trainees are also given training on spoken English, computers, customer interaction and entrepreneurship. The trainings account for 40 hours per week, with 30 days of classroom training and 20 days of in-field or on-the-job training.



The program is certified by Schneider Electric India and its partners, which in turn helps students gain recognition from their employers. The company's foundation pays for the equipment, tools, and salaries of the technical trainers. It also designs the curriculum and courses contents with a view to ensuring that the quality and new trends in the market are appropriately addressed during the trainings.

By 2012, vocational training in electrical trades will be provided to 4,000 students, with an additional 300 low-income entrepreneurs receiving support to start their own business in the electrical sector.

Overall BipBop impact

Through its [Planet & Society Barometer](#), Schneider Electric has set out thirteen sustainability performance indicators for a period of three years. For the period 2009-2011, three of them were connected to each pillar of the BipBop program, indicating that

- 1,000,000 households at the BoP gained access to energy thanks to Schneider Electric's solutions;
- 10,000 young people at the BoP were trained in the energy management professions;
- 500 new entrepreneurs at the BoP set up their activities in the energy management field.

Model scalability

A first way to scale models that are being implemented within the abovementioned pillars of the BipBop program would be to deploy each part in every location that Schneider Electric is targeting in order to create synergies that would serve the overall model.

This has been the case in India, where former students of the Electrician Training Program were financially supported to start their own business of battery rental for Schneider Electric's In-Diya lighting systems.



Another example is Senegal, where Kayer – in which Schneider Electric Energy Access fund invested – decided to integrate In-Diya lighting systems into its portfolio.

Key factors to expand the deployment of specific products, especially those ones intended for individuals as lighting or battery management systems, are to improve the distribution process as well as the capacity for end users to acquire them.

Many distribution models exist: from direct sales to end consumer or professional retail through developing a micro-franchise network of entrepreneurs. Creating partnerships with local actors (NGOs, cooperatives, entrepreneurs, SMEs) will help to fine tune the distribution based on their knowledge of local specificities. Other national or international actors that are developing such strategies targeting low-income and/or remote populations could also be of great help when sharing distribution channels of both organizations.

End users may not be able to purchase products easily. Dedicated partnerships with local microfinance institutions will help end users to purchase products thanks to a dedicated line of credit. The way they acquire energy services or products may also be different from one place to another, varying from pay-per-use to sales through leasing. In some places, it may be more relevant to even rethink the value proposition: selling a service (grain milling, water pumping, entertainment) instead of electricity.

Conclusions

The BipBop program has been developed to gather and coordinate the skills and competencies within Schneider Electric to develop solutions addressing the challenge of enabling access to energy for the BoP. The three pillars of the program (Business, Innovation, and People) create a systemic approach, focused on promoting the development of local companies in the field of access to energy through a socially driven investment fund, providing products and solutions that are dedicated and adapted for low-income populations, and contributing to developing long-term competencies in the field of energy management.

Schneider Electric's partners benefit from the company's global footprint, industrialization and technological capabilities, and expertise of its global and local teams (project management, business development, engineering, etc.). For their part, global and local actors bring to the table their expertise and competencies for the projects to be deployed adequately:

- Field players such as NGOs, entrepreneurs and SMEs provide a comprehensive approach of communities and socio-economic contexts. Their links with communities and their experiences in business development ensure viability and relevance of joint actions;
- Agreements with microfinance institutions help to bypass the lack of banking services and facility of payment for end-user customers;
- Governments, regional and local authorities bring legitimacy, validate projects implementations and provide appropriate tariff policies. Authorities can also co-invest in specific projects and address infrastructure challenges.

- Conventional partners such as distributors and wholesalers contribute to building models based on their local knowledge and access channels.
- Creating global or local collaborative platforms with companies from other sectors that are also developing approaches targeting low-income and/or remote populations helps to gather knowledge and reach shared goals.
- Donors and sponsors can help to launch business models by supporting a part of the upfront investments that could not be borne by local communities.

More information

- Watch this [10-minute video](#) on BipBop India's work

