Prague - Project - Portfolio - Planning - Platform

for Renewable Energy Sources

Self-Powered Community Business Knowledge Transfer

The Presentation structure,
October 2013, the fourth visit of the Philippines
after the ICSET 2013 in Manila

5PforRES (Prague **P**roject **P**ortfolio **P**lanning **P**latform for **R**enewable **E**nergy **S**ources)

We are a team of international experts providing sustainability solutions based on **S**elf-**P**owered **C**ommunities (SPC) Concept for urban, peri-urban and rural areas anywhere in the world.

Summary:

Jobs, Food, Health, Education, and electrification used to be key drivers throughout the 20th century for developed countries. Now, in the 21st century, these became the necessity for any individual, family, and community anywhere in the world.

Generations living in the 21st century will be greatly affected by dual impacts of climate changes and demand for better quality of life. The challenge remains in combining economic growth with acceptable trends in social equality. Our target groups have an opportunity to be independent electricity producers, co-owners of a decentralized electricity infrastructure, or to be entrepreneurs who are taking advantage of sustainable access to electricity for their business activities.

Electricity has a monetary value. It is highly liquid, banks love it, and producers of centralized electrification are familiar with it. New technologies are bringing up novel accesses to electric power industry. Now almost everyone can become a "utility company", i.e. be able to create, manage, control and leverage his own electric power budget in real time. In developed countries this means using new technology applications (Smart Grid, etc.). For developing countries - and eventually for everyone else – the issue will be that the capital-intensive centralized power grid with substantial transmission loses might be replaced with decentralized electrification on which the concept of SPC is based.

For the target groups, the SPC Concept opens new opportunities:

- Electricity producers can borrow money and loans; banks have sustainable clients,
- Master planning, project portfolio and synergy effect; financing generating added value,
- Business rules for development; demand for education and skills grows,
- Investors see the results of their investment and their motivation is sustained,
- Micro, Small and Medium Enterprises (MSME) control price of electricity,
- MSME generate their own income and they are motivated to use their production waste (e.g. food industry),
- Middle class is growing by creation of all kinds of jobs,
- Food production, health care services and education opportunities expanding due to decentralized and affordable electrification,
- Communities are motivated to participate in climate change control initiatives.

Sustainable Energy for All is an initiative started by the United Nations and now we can see many initiatives focused on overall improvements in access to energy by 2030. Our Self-Powered Community solutions are one of these initiatives.

1. Introduction

Core issue:
- Population growth and global warming,
- Technological advancements are now making socio-economic development based on decentralized electrification feasible. Yet there are still some systemic bottlenecks. This presentation tries to identify some of them and propose solutions.

Examples:
- Access to money for producers of electricity who generate electricity for themselves and who can offer excess production to others (electricity has a monetary value),
- Policy consensus concerning identification and adoption of simple socio-economic drivers that truly reflect actual needs and capabilities of target communities that are to use sustainable electric power generating facilities,
- Needs of electrification in the Philippines (plans of electrification, building of local energy infrastructure and investment in national and local energy industrial base and human resources).

Quality of Life (QL) in a community:
- Core issue: The need for more jobs, food, health care, and education,
- The problem: Deficit in understanding of relationship between a national growth of GDP and energy demand in individual communities.

The solution:
- To accept decentralized electrification (e) based on renewable locally available energy sources as part of the UN challenge “Sustainable Energy for All”,
- To apply simple and transparent socio-economic drivers presented by a simple formula for **Q**uality of **L**ife in Communities: QL => (e) & (w + m) where water (w) and materials (m) are parallel drivers to a decentralized electrification (e).

2. Self-Powered Community

Self: Means to be motivated to participate;
Power: Demonstrates the key tools for our surviving; and
Community: reminds us of our roots.

SPC reflects the nature's tendency to maintain balance with growing human population. SPC concept addresses renewal and maintenance of such natural balance. Reflecting the SPC concept, developed countries already use new, advanced technologies for existing centralized grid power systems (Smart Grid), both for housing (roof-based decentralized electrification) and for larger cities and metropolitan areas (micro grids in centralized grid systems). The future is in fusion of both concepts, applied universally around the world.

Inhabitants of villages, towns, provinces, and countries represent target groups of the SPC Concept.

- Utilizing a natural sense of cooperation within a community (while also using business practices for public-private partnership) and business rules so that community leaders/managers are well equipped for their roles in mobilizing the support and acceptance of decentralized electric power generating systems and ensuring their sustainable operation,

- Effectively motivating community members and leaders in perceiving benefits and becoming stakeholders with a long-term commitment to success of a project of decentralized, community-based electric power generation, distribution and consumption.

Renewable energy sources (RES) and new, already proven technologies open new opportunities to great majority of human population. Decentralized electrification based on renewable sources of energy helps creation of jobs, micro- and small enterprises and building of a middle class.
Sustainable decentralized electrification also allows for development of industrial infrastructure, know-how and knowledge-based sectors of economy, further expanding economic opportunities including exports potential thus supplementing expanding agricultural production made possible by electrification.

3. SPC Units, SPC Clients and SPC Utilities

From economic development and engineering design standpoint we can identify two ranges of electric power generating units:

a) Large power plants with a capacity of about 100 MWe with transmission and distribution grid and b) Small power plants with the capacity of about in 100 kWe with small/micro distribution network (off-grid solutions).

SPC Units (solar, biomass, geothermal, hydro-energy, wind, etc.) with the capacity of about 100 kWe are power plants suitable for "energy island' solutions:

- Natural islands (e.g. decentralized electrification of small islands in Asia and the Pacific),

- Virtual islands (e.g. decentralized electrification of villages and towns located outside of central power grid),

- Roofs and balconies of buildings, and new architectural solutions (applicable to most of the locations in rural, peri-urban and urban areas).

SPC Clients are owners of respective SPC Units. They are - at any stage of their project's life cycle, i.e. design, construction, operation, maintenance, ownership transfer, acquisition, etc. – using services of SPC Utilities.

SPC Utility assists, manages and controls SPC Unit network. SPC Utility operates as a Special Purpose Company and performs the following roles:

- Consulting services to SPC Clients (financing, construction, operation, maintenance, transfers of SPC Units in the framework of services of the SPC Utility)
- Administrative services for owners of SPC Units (monitoring, evaluation, financial closings, business results and benchmarking)
- Cooperation in a framework of the National Energy System on investment in on/off grid systems together with regional (for transmission) and local (for distribution) electric power services (e.g. with Power Cooperatives operating in all provinces of the Philippines)
- Management and financial control of SPC Units within the scope of a Special Purpose Company
- Financial services to SPC Clients are secured through Revolving Loan Fund (RLF) which should be owned by SPC Utility.
- For back office operations of the RLF the SPC Utility retains professional services from a local bank.

4. Special Purpose Company (SPC Operations) and Revolving Loan Fund (RLF)

Utility company is a business organization performing public service. It is subject to special governmental regulations. SPC Utility implements SPC Concept by performing two specific tasks for management and financial control of internal operations and by providing financial services to SPC Clients.

4.1 Special Purpose Company (SPC) is a logical candidate to performing the role of a SPC Utility. Generally, SPC Utility function is performed by organizations using different labels (i.e. Special Purpose Vehicle; Special Purpose Entity; Special Purpose Company; Segregated Portfolio Company). For the Pilot Portfolio Project (PPP) we used **SPC Operations** label.

Characteristics of SPC Operations are as follows:

- Function: SPC Operation is created for the purpose of fulfilling a very specific and limited tasks (power plants portfolio project consisting of SPC Units based on a mix of RES technologies and supplementary projects created by synergy effects during the SPC Concept implementation),
- Securitization: Protection of parent organization (SPC Utility) from financial risks related to operation of any SPC Unit in the SPC Utility portfolio,
- Risk sharing: Allows additional investors to take part in a project,
- Assets transfer: SPC Units can transfer assets into SPC Operations or use financing from RLF thereby achieving their specific goals without putting the entire organization at risk,
- Regulatory reasons: SPC Utilities using SPC Operations are set up in a way that allows them to better react to regulatory changes and modify ownership of specific assets,
- Corruption: SPC Utilities adopt standards of banking management, internal financial control and internal audit within the environment of "Public Private Partnership". A broad and mixed portfolio of owners of SPC Units and their real time operations are natural (and effective) system with the ability to resist dangers of fraud and corruption (both in developed and developing countries).

Throughout planning and implementation of PPP project, SPC Operations must be designed carefully and with understanding of local administrative practices, legal and regulatory framework. For more details see Sections 8 and10.

4.2 Revolving Loan Fund (RLF) is a standard financial tool with unappreciated options. RLF offers attractive balance between a) the opportunity to increase capacity of the investment source and b) acceptation of a broader spectrum of clients including those with lower incomes.

An example is a RLF with initial capitalization of $30M, with interest rate below market rates, with 15-20 year schedule of repayment, and its administration costs covered:

- The number of ten loans ($3M each) can be increased over 15 years to seventeen while the initial sum of $30M is still available
- Loan repayment to a commercial bank is generally 4 years; if RLF extends the payback period to 20 years the result is that monthly payments are reduced proportionally (thus households and micro-entrepreneurs with lower incomes can also ask for private financial sector financing).

RLF, properly managed and controlled, accumulates financial sources for other investments, mostly with synergy effects for achieving and maintaining balance between objectives of economic development and objectives of social policies. RLF must be designed in close cooperation with bank's partners:

a) Donor/s (banks or financial institutions which are ready to finance RLF),

b) Local banks, which are ready to assist back-office services of the RLF. This is a task for experts who have a broader and international experience in this area. (For more details see Sections 8 and10).

5. Where are we now?

We are introducing the principles, engineering, and methodology of the SPC Concept to communities (villages, towns or regions and provinces) which are potential SPC Clients as they have the need and the ambition to have a year-around access to locally generated electric power as waiting for electric power being available from centrally-operated grid is not a feasible option. We identify two key areas for our following activities:

A. SPC Concept advocacy and preparation of PPP for specific site

1. Consensus concerning drivers affecting balance between economic growth and objectives of social policies, advocacy of proposed drivers (e), (w), (m) of Quality of Life QL => (e) & (w + m); definition and assistance in dissemination of SPC Concept. (for more details see Section 7).

2. Consensus concerning Financial Framework of the SPC Concept (Project portfolio/Program for one generation); acquiring the know-how and adaption of best practices to serve PPP project; and building of a network. (For more details see Section 8).

3. Reaching consensus on cooperation of existing system of Power Cooperatives (PC) and the SPC Concept should made easier by talking advantage of results and experience gained from specific PPP. Inputs for such cooperation are: a) Independent Power Producer (IPP) is a SPC Client if he uses services of SPC Utility (both existing and future IPPs), b) SPC Utility supplements services of PC (PC is a regional power grid operator and grid is a pool for IPPs. There are no overlaps). Now only large users or industries are allowed to use electric power generated from their own power plants.

B. Pilot projects preparation and implementation

4. Independent Power Producer pilot projects (IPPs) based on bottom-up approach (construction of a single SPC Unit: solar power plant (1MWe), biogas power plant (0.6 MWe), and micro hydro power plant. (For more details see Section 9).

5. Pilot Portfolio Project (PPP) based on top-down approach (investment of $30M representing a mix of about 200 units with the capacity of 100kWe based on an efficient combination of solar, biomass, and hydro-energy and other types of units equipped with central monitoring system. (For more details see Section 10).

SPC Clients should not depend on subsidies and gifts coming from outside. Their operation is to remain profitable. Our activities bring added value to individuals, households, and communities coming from synergy effects: sources of financing might also come from financing earmarked for public safety (prevention against impacts of floods, small earthquake, and earth slide) and from sources earmarked for improvement of environment (preventions of impacts of communal and other waste coming from food production, plastics, etc.) while such financing is also used for building electric power plants.

Two ways of integration of pilot activities focused on Independent Power Producer pilot projects (IPPs) and on project portfolio (PPP):

I. Project preparation and implementation in a province. Services for a project owner (e.g. a local government) start through an “Initial Team” (see the Model for the Philippines).

II. Project preparation at the state government level. Services for a project owner (e.g. a National Agency for Investment) start through establishing and operating a “SPC Centre” (see the model for Ethiopia).

6. Drivers of Quality of life

Social life and economic growth in a community are determined by simple and transparent drivers. The key driver is a sustainable access to electricity, i.e. electrification **(e)**. But we also have two other parallel drivers: one is retention of rainwater (w) and another is utilization of new and used materials (m).

We call this approach "Measurable Strategy in Practice”. For a long time (e.g. for 30 years) both statistical and business indicators have been the same (MWe, KWh, m^3, tons, and $ in absolute value or per capita), and they can be used by SPC Clients for benchmarking and by planners at regional and national levels for their particular needs.

Internal relations of these three drivers are expressed in the formula: **QL => (e) & (w + m)**.

Parallel driver **(w)**: It represents investment in rainwater retention and into subsequent activities of water management (e.g. access to drinking and service water), or building and operation of a hydro-power plant. The indirect role of this driver is reduction of safety risks coming from floods, earth slides, and impacts of earthquake (e.g. to retain more water in the landscape and create water retention tanks, swampy bamboo woods, etc.).

Parallel driver **(m)**: It represents investment in utilization of new and used materials both for energy production and for removal of waste in situ:

- New materials: (e.g. growing a multi-use bamboo; using other post-harvest materials: sugar corn, rice, nuts, etc. and other bio waste - domestic, raising poultries, etc. - should be used for energy production and for landscape clean-up,

- Used material (e.g. plastic, used tires, communal waste etc.) should be used for energy production and to contribute to clean-up peri-urban regions and to liquidation of industrial waste while also generation jobs and income. Master plan of a community can reveal such opportunities for SPC Utility,

- Food industry waste (e.g. residua from fruits, vegetable and other natural products, and from food sales and services coming from hotels, supermarkets, etc. Large food producers generating large volumes of waste which has a potential to be used for generating electric power or heat are exploring opportunities using PPP model. The proposed Pilot Portfolio Project is an example of such approach.

7. Financial Framework, Public Procurement and Financial services

7.1 Financial framework for standard investment projects using revolving loan financing is, in general, 15 – 20 years. For financial model of the PPP with synergy effects we proposed 30 years (thus reflecting, for example, the approach taken by the Korea's Official Development Assistance). We recommend 30 year because it is a statistical time frame for one generation.

7.2 Public procurement is the core rule for PPP implementation and for selection of suppliers for construction of individual SPC Units. After SPC Clients express their interest, SPC Utility prepares and finalizes list of SPC Units for the procurement. SPC Utility cooperates with selected SPC Clients, local Power Cooperatives, and external consultants, and finalizes Terms of Reference (ToR) to address potential suppliers for the PPP, and opens tendering process. SPC Utility manages, controls and evaluates tendering and contracting for all projects in project portfolio. After the project completion, the SPC Utility continues in monitoring of all life cycle stages of individual projects and project portfolio until its financial closing. Procurement processes are to follow national legislation.

7.3 Financial services from SPC Utility to SPC Clients are managed and controlled by a Special Purpose Company and the flow of finance will be implemented and controlled by Revolving Loan Fund. Both Special Purpose Company and Revolving Loan Fund will be integral parts of the SPC Utility with independent roles:

- Role of the Special Purpose Company is in shielding assets of SPC Units in the SPC Utility from detrimental effects of project failure,
- Role of the Revolving Loan Fund is to finance preparation, construction and operation of projects of project portfolio upon application of loan from a SPC Unit.

Financial services are to comply with national legislation and regulations and to follow international standards (e.g. for accounting, internal auditing etc.)

For detailed discussion we developed a financial (business) model for demonstration and simulation of business principles. Implementation of the business model is a role of proposed SPC Utility, which coordinates processes of investment, organizes services and administration, and motivates households and entrepreneurs to participate in improvement of quality of life in their community. (for more details see Sections 9 and 10).

8. New technologies for Independent Power Producers (IPP)

Advanced and proven technological solutions for decentralized, renewable sources-based electrification already exist and they are becoming widely available.

We offer to our clients following set of individual projects:

- Solar power plant unit (about 1MWe),
- Biogas power plant unit (about 0.5 MWe),
- Micro hydro-energy power plant units (about 10MWe), and

We plan to utilize these individual investment activities as pilot projects to demonstrate organic operation and synergy effects gained from operation of power plants (SPC Units) under one business organization (SPC Utility).

Proposed projects are using proven technologies used in Europe (Germany, Denmark, the Czech and Slovak Republics). Specific details are available upon request.

Each project is presented by standard documentation for offers. The goal is have relevant information and visual presentation of these technologies available for:

- Advocacy of the SPC Concept,
- Pilot project proposal dissemination, and
- Clarification of specific issues concerning presentation of the comprehensive approach represented by the SPC Concept.

IPP pilot projects and demonstrations are the key opportunity for working on deeper analysis and looking for solution of other tasks: e.g. legal framework for the proposed project portfolio, procedures and limits of public administration in participation of public budgets in the PPP at the national, provincial, and municipal levels and getting more detailed understanding of impact of synergy effects on improvement in quality of life in given communities.

9. Pilot Project Portfolio (PPP) based on Public Private Partnership

Implementation process of the SPC Concept starts with pilot project portfolio. PPP financial model is introduced and it was built on the following assumptions:

9.1 Initial assumptions

PPP is for one generation (30 years) of a population living in a "province/district" with about 1million inhabitants which desired to improve its quality of life.

QL => (e) & (w & m) growth by drivers and synergy effects:

Driver (e): Electricity – investment in decentralized electrification.
Driver (w): Rainwater –investment in water retention and water management projects.
Driver (m): Materials – investment in bamboo plantation and sales of products after harvesting (1), and investment in food industry waste use for electricity and heat production (2).

Driver's characteristic:

(e): $30M: Access to electricity (Benefits, Opportunities, Costs and Risks, BOCR),
(w): $2M: Safety risks reduction (e.g. investment in protection against floods, earth slides etc.),
(m1): $3M: Investment into bamboo fields, sale of harvest products and landscape protection,
(m2): $0: Food industry waste gasification (e.g. rice, orange, nuts etc.) and sale of electric power
In total: $35M (in 2014 - 2016)

Other assumption for financial model calculation:

- Electric power rates – (2013) $0.14 per kWh,
- Portfolio management costs 8,3% of the initial investment (it represents costs on management, procurement, evaluation, audits and all administration tasks over the 30 years of the portfolio life cycle); synergy effects, e.g. for education,
- Tax holidays 6 years (a new pilot project with a pioneer status),
- Taxes 10% (decentralized small business with local impacts on a province's environment),
- Interest on loan 6% (average value between international financial institutions and commercial banks),
- Financial intervention for decentralized electrification (e.g. commercial loan leveraging three times $10M in 2024, 2030, 2036; in total $30M); synergy effects,
- Financial intervention for expansion of bamboo plantation (e.g. following the 3$M loan from a commercial bank for the next 1000 hectares, in total 2 000 hectares in 2030 for use. It is assumed that bamboo industry will be built by that time and post-harvest products for food industry, construction industry and for furniture production will be used),
- Cost of insurance: 1 % of the investment of $35M (guarantees, ancillary works are included),
- Depreciation and amortization; for power plant projects over the period of 15 years (6.7 %/year); for bamboo projects and retention projects over 30 years (3.5 %/year).

Characteristics of the driver: time limits and other inputs for the financial model calculation:

(e): Life cycle of power plants is 30 years, initial investment $30M, maintenance and reinvestment in total +$40M over 30 years:
- Installed capacity 9,2 MW
- Production capacity 5,025 MW/year
- Production of electricity 44,019 MW/h per year

(w): The goal is to protect, regulate, and use rain water for water services (supply water, drinking water), for hydro-energy purposes (micro-hydro plants), and invest into construction barriers against floods, earth slides, small earthquakes, and invest into re-cultivation of landscape (complement to investments into transportation, housing, and industrial development).

(m): Two examples of materials were selected for this financing model.

1. Investment in bamboo production and sales of products after harvesting.

Bamboo: Life cycle of bamboo field is 25 years, 500 plants per hectare, the first bamboo fields 1,000 hectares, first harvest after 7 years; second bamboo fields 1,000 hectares. Return on investment after 7 years, post-harvest products are sold to construction, food, furniture, and energy industries.

2. Investment in food industry waste use for electric power and heat generation.
   Food industry waste: The most critical waste representing health risk to human population and having high energy-generation potential is that coming from food industry. All these waste can be used electricity production through gasification (e.g. residua from vegetable production from fruits, vegetables and other natural products).

9.2 Results of the PPP financial model

We proposed a mix of 5 units (solar PV, hydro-power, biomass, wind, geothermal), accepted one of the options of electric power rates ($0.14 per kWh) and added other assumptions (see section 10.1). Without weighting of various inputs into the financial model we are presenting the methodology and results of calculation for discussion on the professional work for a Client on the contract base.

Tab. 1: 2016 results of the Initial Investment

Type of Power Plant	Capacity Factor	Unit Capital Cost $M	Initial Investment (2016)			
			Number of Power Plant	Capital Cost $/MW	O&M Cost $/year	Production Capacity kW/ year
Solar PV	25%	1. 8	26	4 680	52 000	650
Hydro-power	45%	2 .2	15	3 300	15 000	675
Biomass	80%	4. 2	23	9 660	345 000	1 840
Wind	30%	1. 5	8	1 200	15 200	240
Geothermal	90%	4. 6	18	8 280	180 000	1 620
TOTAL			**90**	**27 120**	**607 200**	**5 025**

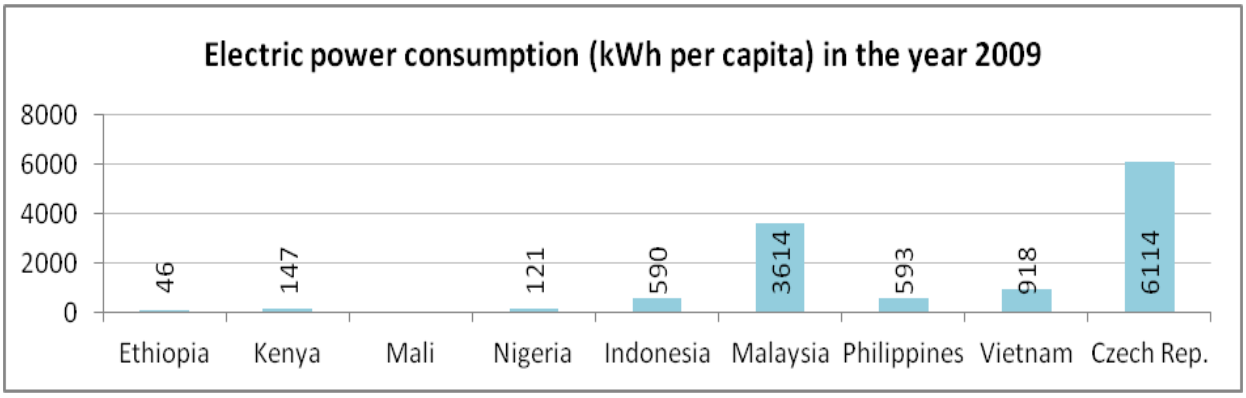
Tab. 2: Results after 30 years (in 2043)

Type of Power Plant	Capacity Factor	Unit Capital Cost $m	Final Investment after 30 years (2043)			
			Number of Power Plant	Capital Cost $/MW	O&M Cost $/year	Production Capacity kW/ year
Solar PV	25%	1. 8	52	9 360	104 000	1 300
Hydro-power	45%	2 .2	30	6 600	30 000	1 350
Biomass	80%	4. 2	46	19 320	690 000	3 680
Wind	30%	1. 5	16	2 400	30 400	480
Geothermal	90%	4. 6	36	16 560	360 000	3 240
TOTAL			**180**	**54 240**	**1 214 400**	**10 050**

Tab. 3: Summary of results for one generation (1 million people)

Results obtained over the period of 30 years	Total $M	Comments
Investment cost of power plant	54	Added value (in the end) 88 kWh per capita, only for households and MSMEs
Investment cost of bamboo fields planting and operation	6	2 000 ha and new sustainable jobs for in agriculture, construction, food, and furniture making
Investment cost of rain water retention (water, floods, earth slides, hydro-energy, etc.)	100	About $2m – $4m projects per year can be started
Reinvestment cost of power plant	40	18MWe installed capacity creates new jobs, new skills and new entrepreneurs will have access to electricity
Administrative expenses	5	Money invested in middle class growth
M&O cost of power plants	25	Skills and education in engineering
M&O cost of bamboo fields	11	Skills and education for a new industry
Revenues of power plant	247	In total $326M are invested the province; SPC Concept is disseminated, synergy effects are tested and economy and social growth are apparent
Revenues of bamboo plantation	80	
Cash on hand at the RLF (2043)	24	The province has its future under control: RLF has money on its account, and enjoys trust of the financial sector

Tab. 4: Electric power Consumption (industry, transport, agriculture, households and micro entrepreneurs), only for discussion purpose:



10. Implementation of Pilot Projects

SPC Concept is ready for implementation. The main task now is to identify suitable clients for:

a) Pilot individual projects for Independent Power Producers (IPP)
and/or
b) Pilot Project Portfolio (PPP),

10.1 Pilot Project Stages

1. **Initial activities and Acquisition Marketing**: Initial, ongoing (day-by-day) activities in SPC Concept dissemination and Client acquisition marketing. The goal is to identify SPC Clients for individual project (IPP) and finally for the PPP, and secure contracts for preparation of Application Form and submission of documents to donors for specific pilot projects.

2. **Application Form preparation and submission**: Consulting services to SPC Clients for obtaining financing for:

   a) IPP: Pilot individual project preparation (e.g. feasibility study) and implementation (e.g. individual project for a specific site),

   b) PPP: Project portfolio preparation (e.g. strategy plan, master plan and feasibility study) and implementation (e.g. a project portfolio for a province/district)

   The goal is to submit, advocate SPC Client's application and to sign contract between SPC Client and Donor.

3. **SPC Clients implement pilot project**: it presents follow-up of consulting services financed upon rules included in contract between SPC Client and Donor:
   a) IPP (standard services for project preparation and implementation)
   b) PPP (integrated services for master planning, terms of reference preparation and application, for tendering evaluation, monitoring control, portfolio evaluation, internal financial control of the PPP financial closing)

10.2 Steps recommended for pilot projects preparation and implementation

a) Pilot Individual Projects (IPP):

1. Site identification and input data gathering
2. Business plan for a Donor, and involvement of a Special Purpose Company
3. Obtaining of binding offer form a Donor, financing guarantees
4. Working on a contract and securing financing
5. Construction and power plant operation

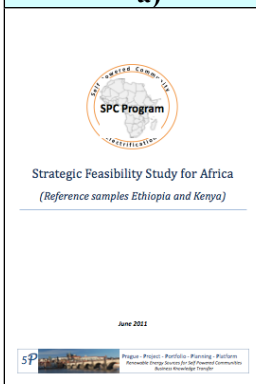
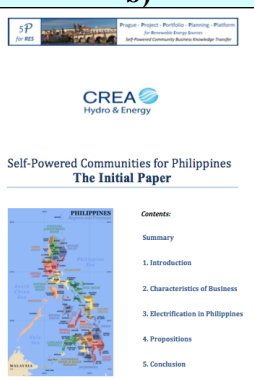
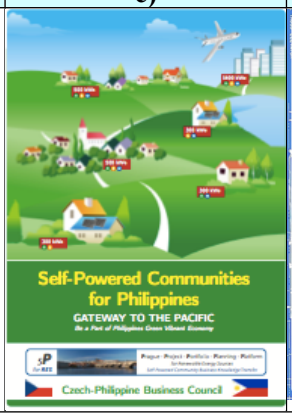
b) Pilot Project Portfolio (PPP):

1. Identifying a province (region) and gathering of input data. SPC Utility proposal
2. Reaching a consensus in a province which is in harmony with the National Power Authorities (government)
3. Advocacy for PPP and submitting of pro-forma Application for PPP financing
4. Application Form and all appendixes submitted to a Donor (by the province)
5. Financing for a feasibility study and binding offer for PPP implementation
6. Donor's approval and PPP financing
7. PPP implementation (e.g. IPP tendering, monitoring, financial closing)
8. Construction of the IPP and other (synergy) and their operation
9. SPC Utility in operation

List of Abbreviations:

Abbreviations	Commentary	Section
RES	Renewable Energy Sources	2
SPC	Self-Powered Communities	2
SPC Concept	Self-Powered Communities Concept (methodology presentation)	Summary
SPC Unit	Self-Powered Communities Unit (e.g. a power plant 100kWe)	3
SPC Utility	Self-Powered Communities Utility (portfolio of assets; e.g. power plants)	3
SPC Client	Self-Powered Communities Client (potential or real co-owner of assets)	3
SPC Operation	Special Purpose Company Operation (process description)	4.1
RLF	Revolving Loan Fund	4.2
IPP	Independent Power Producer	8
PPP	Pilot Project Portfolio	9
PPP	Public Private Partnership	9
MSME	Micro, Small and Medium Enterprises	Summary
O&M	Operations and Maintenance	9.2
ToR	Terms of Reference	7.2
kWe	kilo-watts of electricity	9
MWe	mega-watts of electricity	9
kWh	kilo-watt hours of electricity	9
ha	hectare/s (e.g. of a bamboo field)	9

12. References:

	2011-12	2011	2012	2013
	a)	b)	c)	d)
				
a)	Self-Power Communities for Africa: Roadmap http://www.fairplay.cz/road-map-spc-for-africa.pdf Strategic Feasibility Study for Africa: http://www.fairplay.cz/strategic-feasibility-study-for-africa.pdf			
b)	Self-Powered Communities in the Philippines: http://www.fairplay.cz/ip-filipny-tech-data.pdf			
c)	Self-Powered Communities in the Philippines: www.fairplay.cz/spc-asie.pdf			
d)	Self-Powered Communities in the Philippines: http://www.5pforres.eu/download/blueprint-final.pdf			

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Self-Powered Communities (SPC)

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