



Social, Sustainable and Rural Energy in Mali

Energy Services for rural areas in Mali



Journée d'études "Le rôle des mini-réseaux dans les réponses territoriales aux enjeux de la transition énergétique" à Champs-sur-Marne – 06/04/2018



YELE Consulting – Company overview



YELE Consulting is a **French Consulting company** specialized in the **energy transition and digital transformation**, with extensive experience in leading **strategic and operational projects**.

*YELE is advising clients in several sectors of the E&U ecosystems: **EDF, Enedis** (French DSO), **RTE** (RTE), etc. and **French local authorities**.*

YELE Consulting has also operations in **West Africa** through its **subsidiary, CIFED**, created in **2013**. CIFED is active in **consulting, engineering** and **training** in the **energy and sustainable development sectors**.

Headquarters in
Mali

Presence in
Senegal

Partner in **Cameroun, Guinea, Benin and Mauritania**



In addition, **YELE Consulting** provides **pro-bono assistance** to major NGOs working in the **energy and sustainable development sectors**.



○
2010

○
**Think SmartGrids
Member**

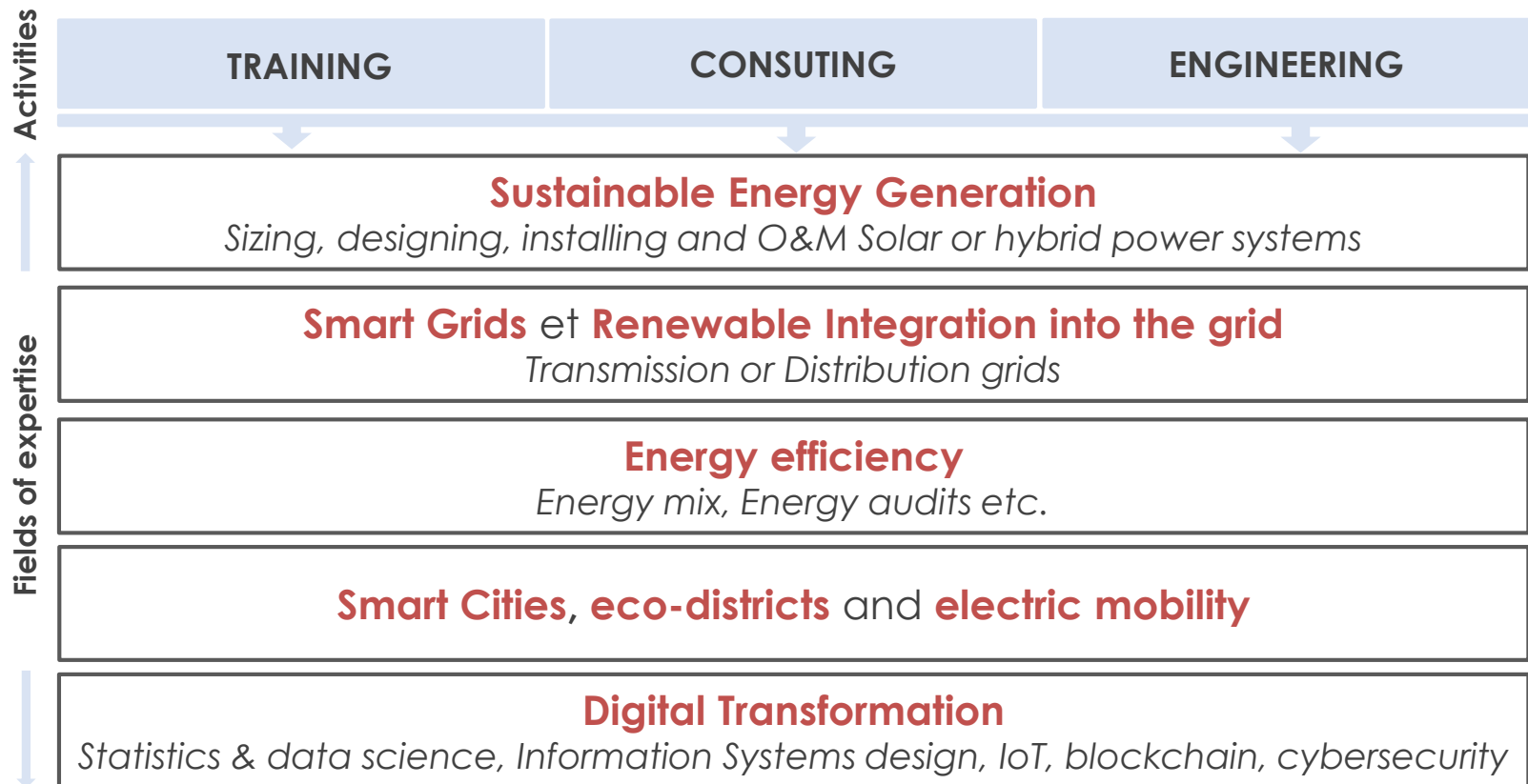
○
**4,8 million € in
2017**

- **53** consultants in **France**
- **10** experts in **Mali** and in **Sénégal**
- **300** students and interns trained

Activities and field of expertise



YELE CONSULTING AND ITS SUBSIDIARY CIFED HAVE ACTIVITIES IN TRAINING, CONSULTING AND ENGINEERING, RELATED TO 5 FIELDS OF EXPERTISE:



Birth of a project : a partnership between the HCC and CIFED



Key figures

Rate of access to electricity in Mali : **27,3%**

- **51,3% in urban area**
- **11,8% in rural area**

Subject of the convention between the HCC and CIFED

- **Finding funding** for projects regarding training and access to energy in rural area
- Helping cities in training their population for energy, and sustainable developments jobs.
- **Implementing projects for access to electricity in rural area in collaboration with local governments.**

Municipalities member of the HCC in Mali



Feedback from academic literature and partners

Access to energy micro-grid projects in Africa:

- ✓ High risk projects
- ✓ Low return on investment

Low number of customers

Low consumptions

Difficulties in payment collection

Benefits just from electricity sales is often not enough to pay for maintenance or investments

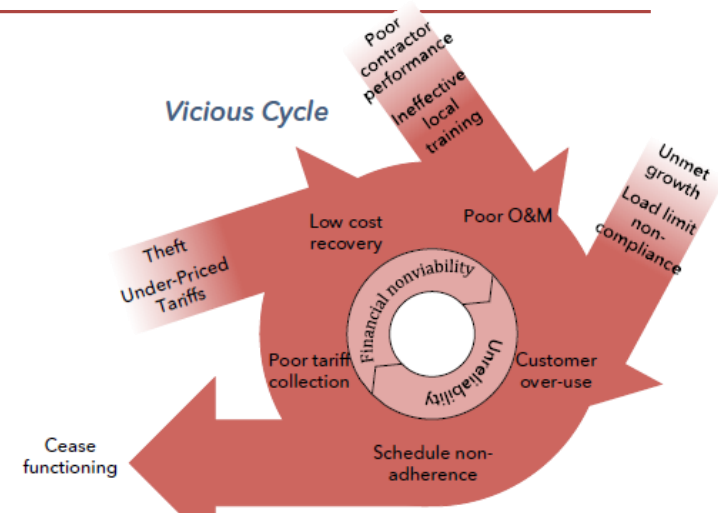
Lessons to be learned for the project:



Engage with local communities



Develop local economic activity



From : Microgrids for Rural Electrification: A critical review of best practices based on seven case studies - UC Berkeley 2014

Chosen solution for the project

*MicroGrid solution
from a supply partner*



Economic activities



Charging station of electrical devises



Renting of cooling devises

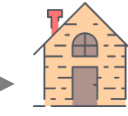


Sewing machines



Computers and IT equipments

Selling excess electricity



**Community building,
public lighting**



**Water pumps for
Agriculture**



Schools

Local communities engagement

Designing the project

- ✓ Work with the HCC to locate suitable cities with strong local communities involvement.
- ✓ Design of the different electricity services that could fit the need of the communities

Implementing the project

- ✓ Work with local women group to identify people able to help managing the micro-grid with the help and training of CIFED.

Economical activities

- ✓ Work with women groups to identify local entrepreneurs that could benefit from the project.
- ✓ Helping entrepreneurs in putting up their activities (training, finding micro loans etc.)





Expected outcomes of the project

Local job creation

**Raise on living standards
thanks to sustainable economic
activity**

Empowerment of women

Electrification of public facilities

Environmental benefits

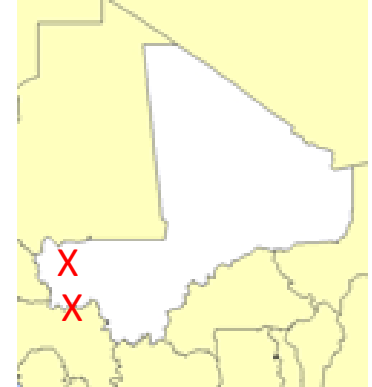
(Less CO2 emissions from diesel generators)



Pilot projects

Two areas with different characteristics :

- ✓ **Niamana** : quite dense area (30k inhabitants) where the economic activity is quite developed
- ✓ **Domba** : very low density area (10k inhabitants), low economic activity



In each municipality, 3 villages will have a micro grid during the pilot phase

6 different micro grids on villages with different local context

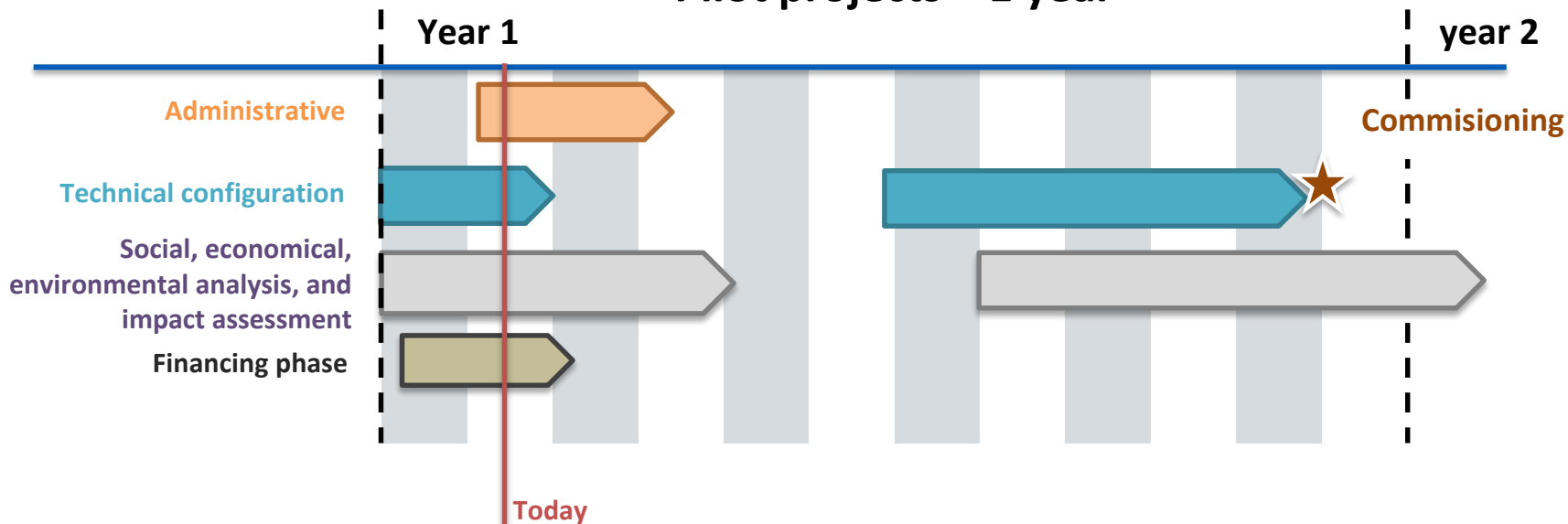
Expecting benefits is varying from one village to an another.

Thank to the diversity context of the pilot phase micro grids, we hope to get as much feedback as possible to insure the success of the generalisation phase

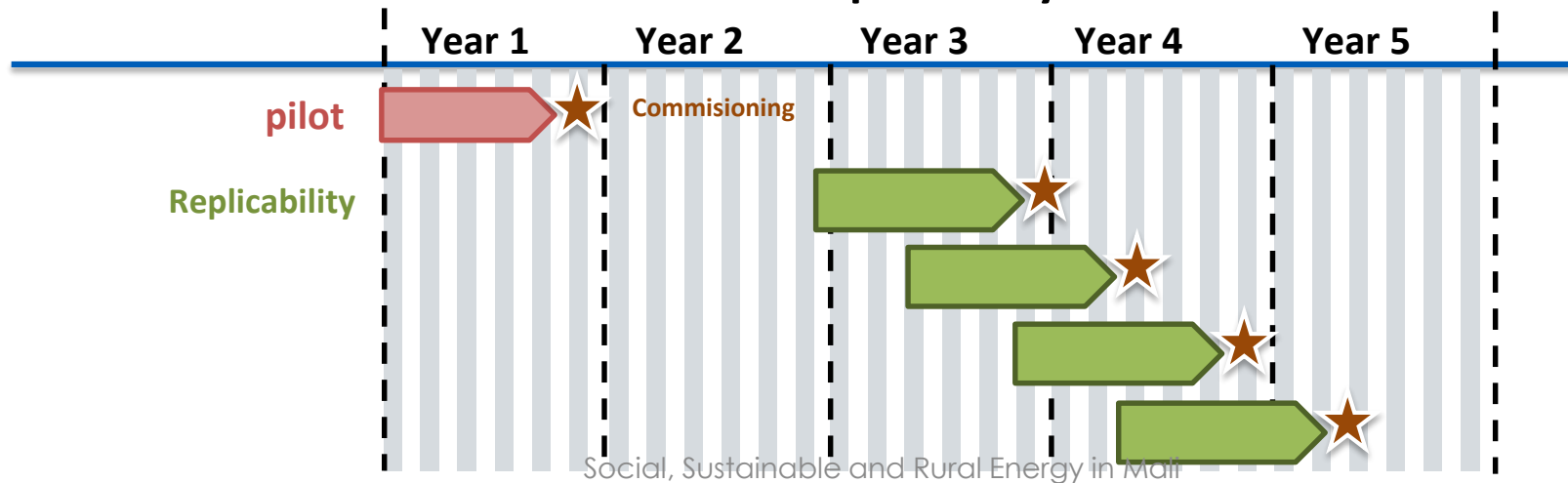


Planning

Pilot projects – 1 year



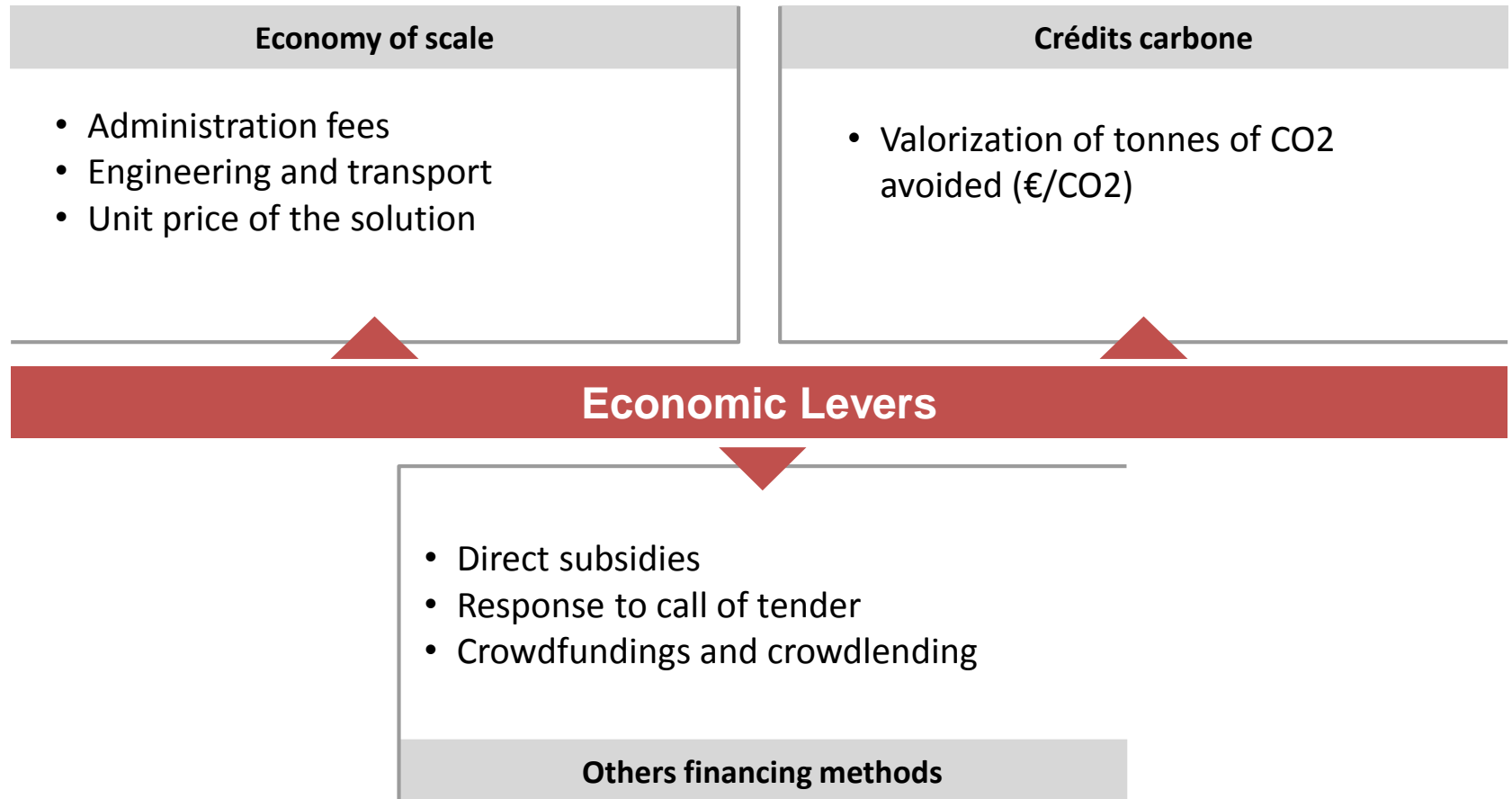
Replicability



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Economic levers of the project



Thank you for your attention

