SUSTAINABLE ENERGY FOR ALL

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EXECUTIVE SUMMARY

Powering Healthcare in Madagascar

Market Assessment and Roadmap for Health Facility Electrification

MARCH 2024

Acknowledgements

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Acronyms

ADER	Rural Electrification Development Agency
AFD	French Development Agency
AP	ADER Call for Proposals in rural electrification
CAPEX	Capital Expenditure
CHRD	District Referral Hospital
CoGes	Management Committee
CSB	Basic Health Centre
DB	Database
DCC	Department of Community Cooperation
DEPSI	Department of Studies and Information System Planning
DER	Department of Energy Emergence
DfM	Doctors for Madagascar
DHRD	Department of District-Level Referral Hospitals
DSSB	Department of Basic Healthcare
EaaS	Energy-as-a-Service
EE	Energy Efficiency
EIB	European Investment Bank
EU	European Union
GHG	Greenhouse Gases
HF	Healthcare Facility
HFE	Healthcare Facility Electrification
IEP	Integrated Energy Planning
MEF	Ministry of Economy and Finance
MEH	Ministry of Energy and Hydrocarbons
MG	Mini-grid
MDTP	Ministry of Decentralization and Territorial Planning
MSanP	Ministry of Public Health
MUSD	Million(s) of US dollars
N.B.	*Nota bene*
O&M	Operation & Maintenance
OPEX	Operational Expenditure
PAYG	Pay-as-you-go
PHC	Powering Healthcare
PV	Photovoltaic
RE	Renewable Energies
SEforALL	Sustainable Energy for All
TFP	Technical and Financial Partners
TTA	Trama TecnoAmbiental
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNOPS	United Nations Office for Project Services
USAID	United States Agency for International Development
USD	US dollars
WB	World Bank
WHO	World Health Organization

CHAPTER ONE

Market Assessment

The Malagasy health system relies largely on the public sector – 75% CSBs[1] and CHRDs[2], which are covered by the study

HEALTH SITUATION - KEY FIGURES

392/100,000

Maternal mortality rate (2020)

World average: 157

Sub-Saharan Africa average: 545

0.25/1,000

Number of qualified health professionals (doctors, nurses and midwives) per 1,000 people.

WHO recommends 4.45/1,000

45.3/1,000

Infant mortality rate (2021)

World average: 28.4

Sub-Saharan Africa average: 49.9

64.5 years

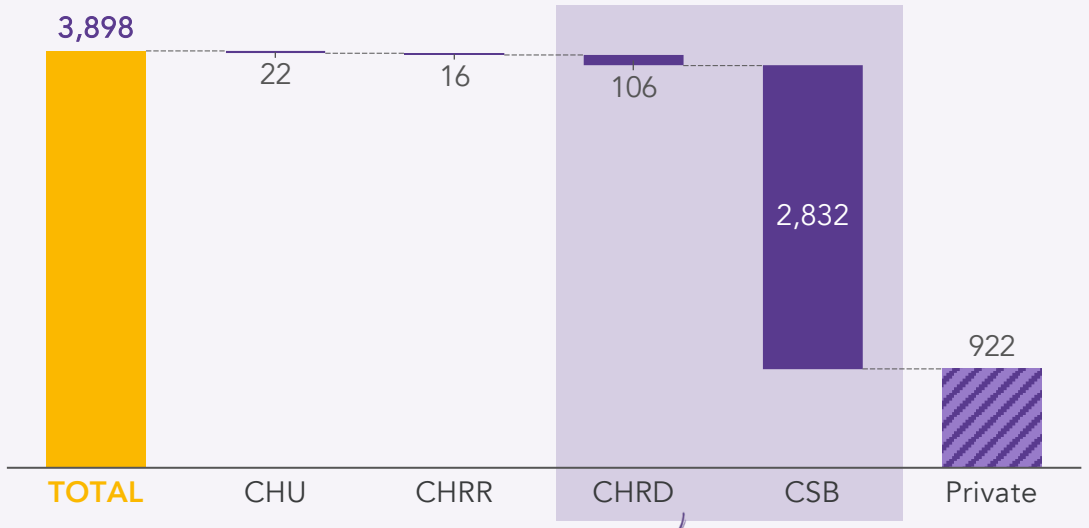
Life expectancy: (2021)

World average: 71.3

Sub-Saharan Africa average: 60.2

Source: WHO, World Bank – 2020 and 2021, DSSB, DHRD and DEPSI/MSanP - 2023; (1) CSB: Basic Health Centre, (2) CHRD: District Referral Hospital, CHU : University Hospitals, CHRR: Regional Referral Hospitals.

3,898 HEALTHCARE FACILITIES (HFs) IN THE COUNTRY

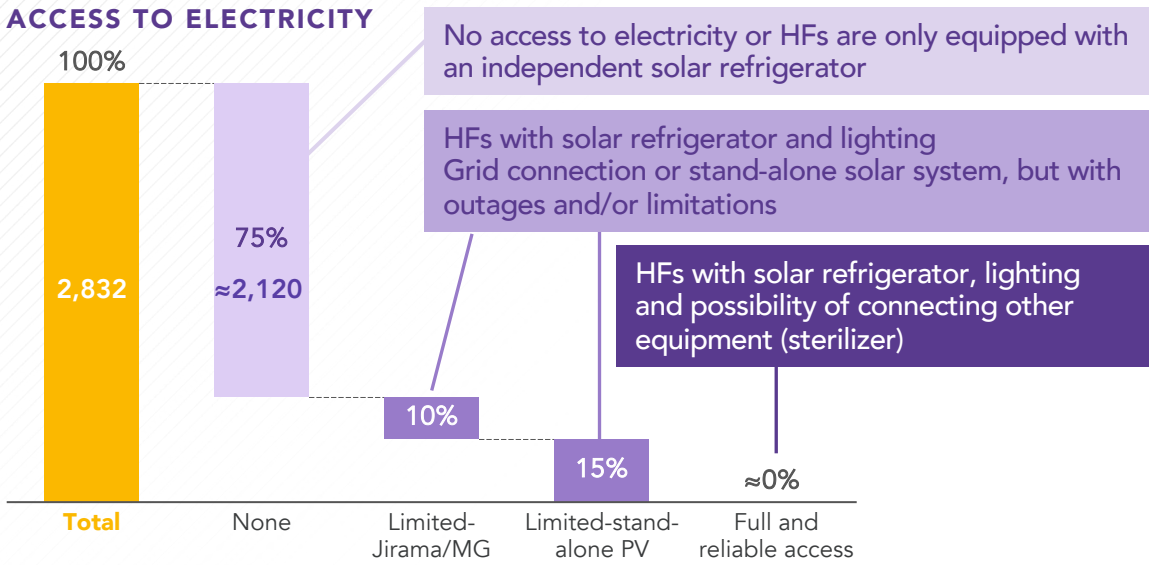


- **Largest number** (2,938) of HFs in the country, representing 75% of HFs (public and private)
- HFs with **the lowest access to electricity**
- HFs often **in rural or isolated areas**

Most CSBs are not electrified, whereas all CHRDs are electrified due to the equipment they use, although this is often inadequate

CSB ELECTRIFICATION STATUS

At present, access to electricity in the CSBs is **rudimentary and limited mainly to basic lighting provided by small solar panels installed on roofs.** Although there is electricity, it does not allow for satisfactory improvement of the CSBs. The **breakdown of access to electricity in this context** is shown below:



CHRD ELECTRIFICATION STATUS

CHRDs normally **all have access to a minimum power supply**. However, they face **very limited access** with numerous power cuts. The daily availability of electricity can vary from 1-2h per day to around 16h per day, **depending on the reliability of the power source**. A more reliable power supply would greatly improve the health services provided to the population.

THE DIFFERENT SOURCES OF ELECTRICITY

JIRAMA Grid

Private mini-grid

Solar plant

Generator

N.B.: most CHRDs have a mix of several of the above electricity sources to increase the number of hours of supply.

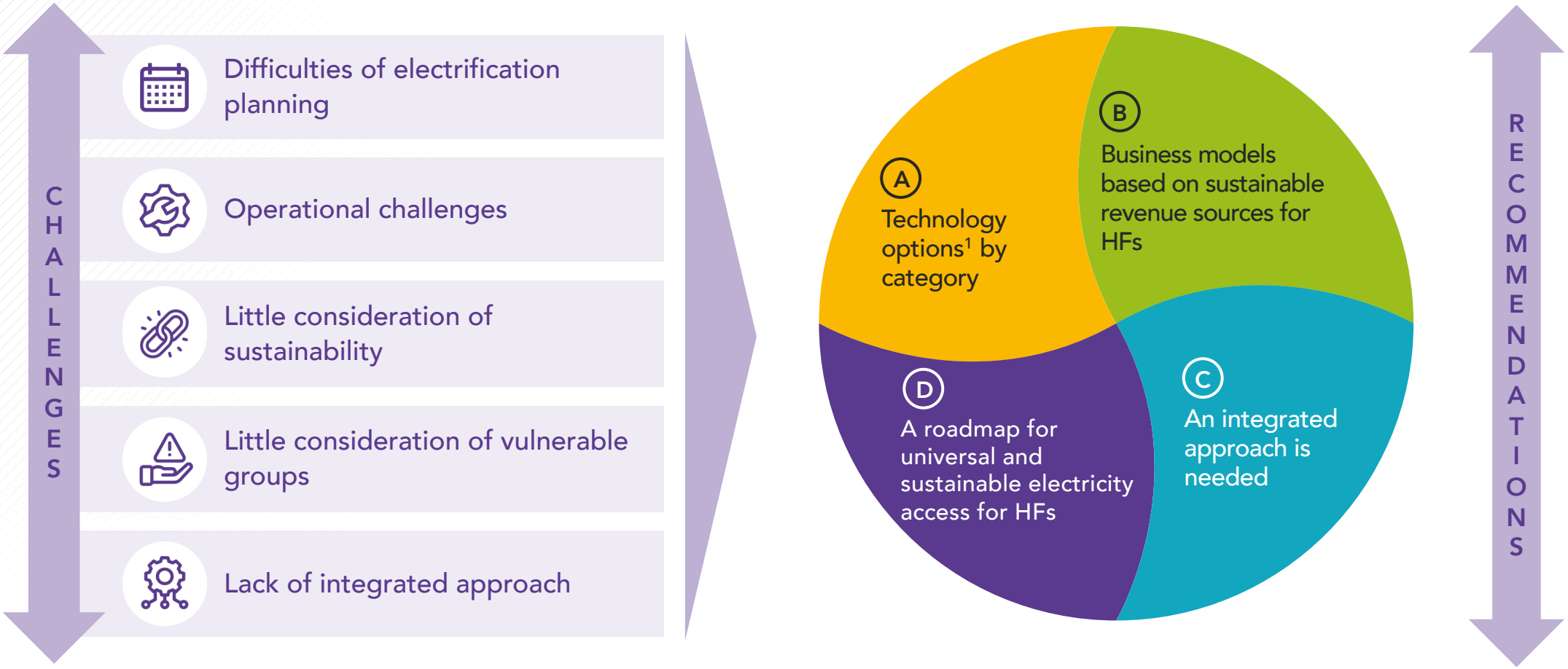
According to information from DEPSI, **around 50% of CHRDs are connected to JIRAMA**. Unfortunately, data on other sources of power (individual solar plants, generators) are not available.

Source: SEforALL Project - Integrated Energy Planning (IEP), October 2023, Projet LEAD World Bank - Field surveys for 1,189 CSBs, summer 2022; Database provided by DEPSI, November 2023, MSanP interviews, SEforALL/PHC field visits, MSanP/DEPSI database (November 2023)

CHAPTER TWO

Solutions and Recommendations

4 categories of solutions and recommendations are proposed to overcome the main challenges faced by HF electrification in Madagascar



(1) For stand-alone power plants, solar has been chosen as the easiest and quickest solution (i.e. no need for a study of energy source potential vs. other RE) to deploy, with an attractive cost-benefit ratio and relatively low maintenance costs. For mini-grids, energy sources can be solar, hydro, wind or hybrid

The following solutions and recommendations are proposed to overcome the main challenges faced by HF electrification in Madagascar ❶②③

RECOMMENDED SOLUTIONS	DESCRIPTION	PERIOD[1]	LEVEL
A. TECHNOLOGY OPTIONS BY CATEGORY			
CSBs and CHRDs: 1 stand-alone solution and 1 back-up solution, both consisting of solar panels + battery, have been selected	• The main electrification solution (59%) is **stand-alone solar** (for all CSB or one/several CHRD departments). In addition, **back-up solutions to ensure continuity of electricity supply** (power cuts or ability to pay) if the HF is connected immediately or in the near future to the JIRAMA grid or to a mini-grid (MG). • **Investments must be prioritized**, including consideration of the HF's desire for access to reliable and sustainable electricity, as well as its current/future electrification status (e.g. whether the HF will soon be connected to JIRAMA or an MG).	2024-2032	National
CSBs: potential electrification market of 2,174 CSBs nationwide	• **Priority 1**: **CSBs that are isolated or far from a grid** (JIRAMA or MG) should all have **stand-alone solar** (estimated at 1,300 CSBs, of which 1,000 would be electrified by the WB's DECIM project by March 2028). • **Priority 2: 100% of CSBs connected to JIRAMA will need a back-up solution** to ensure continuity of service (particularly in the event of power cuts). • **Priority 3: 80% of CSBs connected to a private MG will have a back-up solution** to deal with any potential issues regarding the CSB's payment ability/solvency.	2024-2032	National
CSBs: solar plant installation must include electrical equipment	• The electrification of a CSB must **cover its basic needs.** • Thus, a **multi-dimensional solution** is required including: (i) generation and storage; (ii) medical and non-medical equipment (including LED lamps, sterilizers and tablets); and (iii) management (telemetry).	2024-2032	Local
CSBs: standardized technical solutions optimize CSB electrification	• The **sizing of** the solar plants has been developed **based on 4 main criteria**: (i) type of CSB (1 or 2); (ii) solar radiation according to location; (iii) electrification status (connected to JIRAMA, a MG, or isolated); (iv) attendance based on number of visits/month. • On this basis, considerations of **solar capacity** (4 options 1.2/2.4/3.6/4.8 kW) **combined with battery storage requirements** (3 options) could be considered. • Finally, **standard technical solutions covering the various possible situations and the associated CAPEX and OPEX have** been estimated.	2024-2032	National
CHRDs: energy audits are needed to define the right solution	• **Projections in terms of the estimated number of stand-alone or back-up solutions** have been issued for CHRDs, thanks in particular to projects already completed (GIZ and UNDP). • However, given the wide diversity of equipment present in each CHRD, and therefore of its electricity requirements, standard sizing cannot be established as it can for CSBs. **A case-by-case assessment will have to be carried out via energy audits for CHRDs.**	2024-2025	National

(1) Period depending on roadmap duration

The following solutions and recommendations are proposed to overcome the main challenges faced by HF electrification in Madagascar ① ② ③

RECOMMENDED SOLUTIONS	DESCRIPTION	PERIOD[1]	LEVEL
B. BUSINESS MODELS BASED ON SUSTAINABLE REVENUE SOURCES FOR HFs			
Without OPEX funding, no business model will be sustainable	• **Various business models**, existing or otherwise, can potentially be considered for the electrification of HFs in Madagascar: Build-Operate-Transfer (BOT), Energy-as-a-Service (EaaS), Pico PV Pay-As-You-Go (PAYG) system, and hybrid models - all of which have their **advantages and disadvantages** in practice. • However, it is **vital for the sustainability of any business model to ensure that OPEX can be covered over the long term**: it is a *sine qua non*!	2024-2032	Local and national
Several conditions are key to adopting a sustainable business model	• The **sustainability and success of business models depend** in particular on: (i) improved payment ability/solvency of the HF over the long term; (ii) appropriate sizing; (iii) a HF that proves its motivation to be electrified (bottom-up approach) and that responds to national planning priorities (top-down approach); (iv) greater involvement of the private sector; (v) a more integrated and coordinated approach between key stakeholders; (vi) and targeted capacity-building.	2024-2032	Local, regional and national
HF solvency can be improved through revenues and cost optimization	• **Ensuring the HF's ability to pay over the long term,** which is the cornerstone of sustainable HF electrification, is crucial. • In addition, **various sources of income/financing** for HFs at the regional, national and international levels have been identified for Madagascar (some of which are already proven). • In addition, **optimizing specific costs such as training, EE equipment and telemetry** can support the sustainability of the business model.	2024-2032	All levels
C. AN INTEGRATED APPROACH IS NEEDED			
A shared goal – improvement of care	• **Electrification of HFs is just one of the key levers for** contributing to the sustainable improvement of healthcare services. • An **integrated approach** including other levers and the key stakeholders in all of these levers is required: provision of equipment; sufficient staff and staff welfare; training; digitization/telemetry; prioritization of investment according to impact; financial sustainability; HF refurbishment/construction; access to drinking water, etc.	2024-2032	All levels
Coordination of multi-stakeholders to be institutionalized	• It is essential to facilitate **synergies** between key players, ensure better **inter-ministerial coordination** and **perpetuate the** PHC project **working group.**	2024-2032	All levels
Multi-dimensional indicators to be defined and monitored	• The indicators for interventions in relation to HF electrification to be monitored need to adopt a more integrated approach, i.e., include not only technical indicators, but also operational (such as alarms) and health (what is the impact of electricity on the health services offered by the HF) indicators.	2024-2032	Local

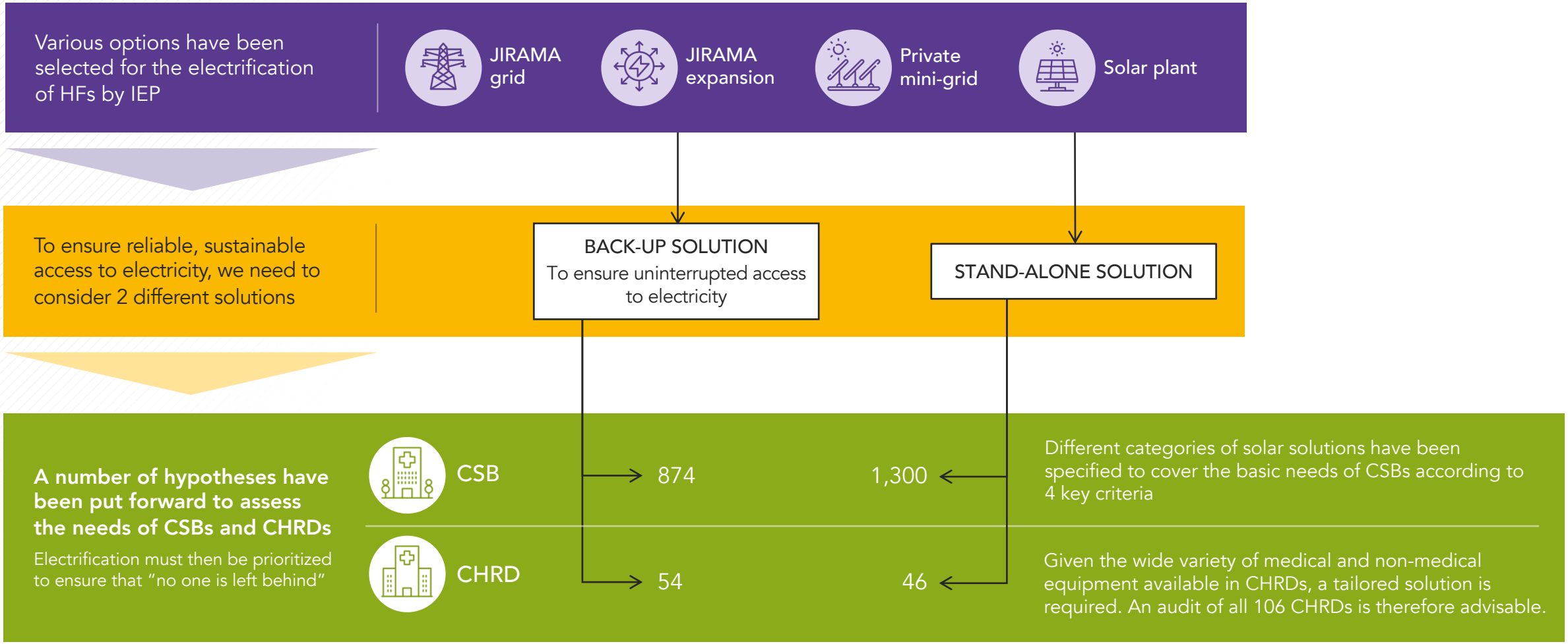
(1) Period depending on roadmap duration

The following solutions and recommendations are proposed to overcome the main challenges faced by HF electrification in Madagascar ①②❸

RECOMMENDED SOLUTIONS	DESCRIPTION	PERIOD[1]	LEVEL
D. ROADMAP FOR UNIVERSAL AND SUSTAINABLE ELECTRICITY ACCESS FOR HFs			
A roadmap based on a bottom-up and integrated approach	• **Sustainable improvement of healthcare services (integrated approach) and HFs (bottom-up approach) are at the core of the roadmap.** • As indicated above, **the integrated approach includes various levers** for improving the health services provided to populations. • **The bottom-up approach** involves ascertaining the real needs of HFs and their desire to access electricity in order to improve the health services they provide. A system of **calls for projects aimed at HFs** could be put in place - MSanP's Regional Directorates could help HFs apply. This approach will be **complemented by a top-down approach** to integrate the planning aspects of HF electrification throughout the territory and the MSanP's prioritization criteria, coordination between key players and centralized monitoring.	2024-2032	Local, regional and national
A step-by-step approach	• The roadmap is broken down into **3 key phases from 2024 to 2032**: (i) Phase 1: Structuring and Cluster test; (ii) Phase 2: Demonstration and Implementation; (iii) Phase 3: Consolidation. The **cluster test** mentioned here involves considering at least 15-20 HFs to experiment with different business models, including revenue streams, as well as bottom-up and integrated approaches. The results of this test will be included in phases 2 and 3. • Each of the 3 phases is **described in detail** with its main activities and results.	2024-2032	All levels
A financing plan and fundraising to be developed	• The roadmap assumes **financing requirements of USD 52M CAPEX and USD 31M OPEX over 10 years** for the electrification of CSBs and CHRDs. • A **joint fundraising strategy** will be developed and implemented as part of the roadmap.	2024-2032	All levels
Key players with specific, synergistic roles	• The **clear roles of each stakeholder** will be defined as soon as the roadmap is launched and phase 1 begins. • **Synergies between stakeholders** will be greatly facilitated, for example by involving a stakeholder in medical equipment supply for every stakeholder supporting the electrification of the HF.	2024-2032	All levels
Implementation monitoring and evaluation to be considered	• **The effectiveness of the roadmap's implementation** will be assessed by a **monitoring and evaluation system** comprising tool development, DB updating (aided by telemetry), planned deliverables and communication, follow-up managers and regular monitoring and evaluation.	2024-2032	National

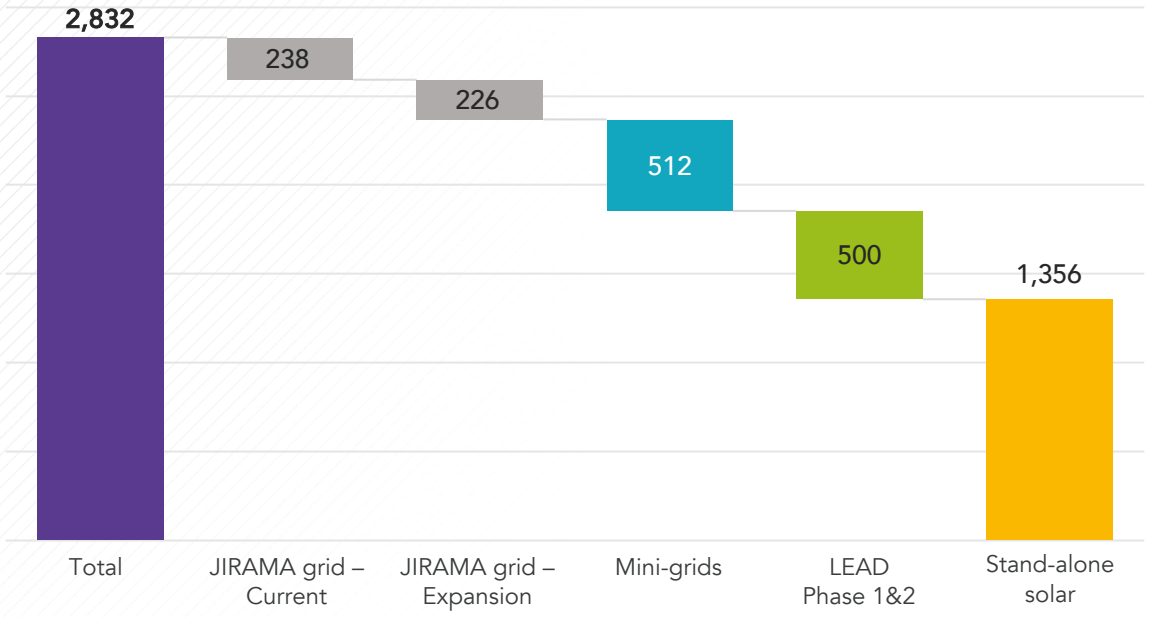
(1) Period depending on roadmap duration

Potential electrification market by 2030 estimated at 2,274 HFs - stand-alone and/or back-up solar solutions



2,174 CSBs could benefit from a combination of solar PV and storage sized in accordance with their needs PROJECTIONS 2030

POTENTIAL CSB MARKET ASSESSMENT



POTENTIAL MARKET:

Back-up solution[1]: **874 HFs**

Stand-alone solution: **1,300 HFs**

RECOMMENDED SOLUTIONS

Battery + inverter + PV solar

LABEL	BATTERY usable kWh	INVERTER Wac
B2-Grid[1]	2.0	2,000
B4.5	4.5	2,000
B6	6.0	2,000
B8	8.0	2,000

LABEL	CAPACITY kWc	NO. OF MODULES (400Wc)
PV1.2	1.2	3
PV2.4	2.4	6
PV3.6	3.6	9
PV4.8	4.8	12

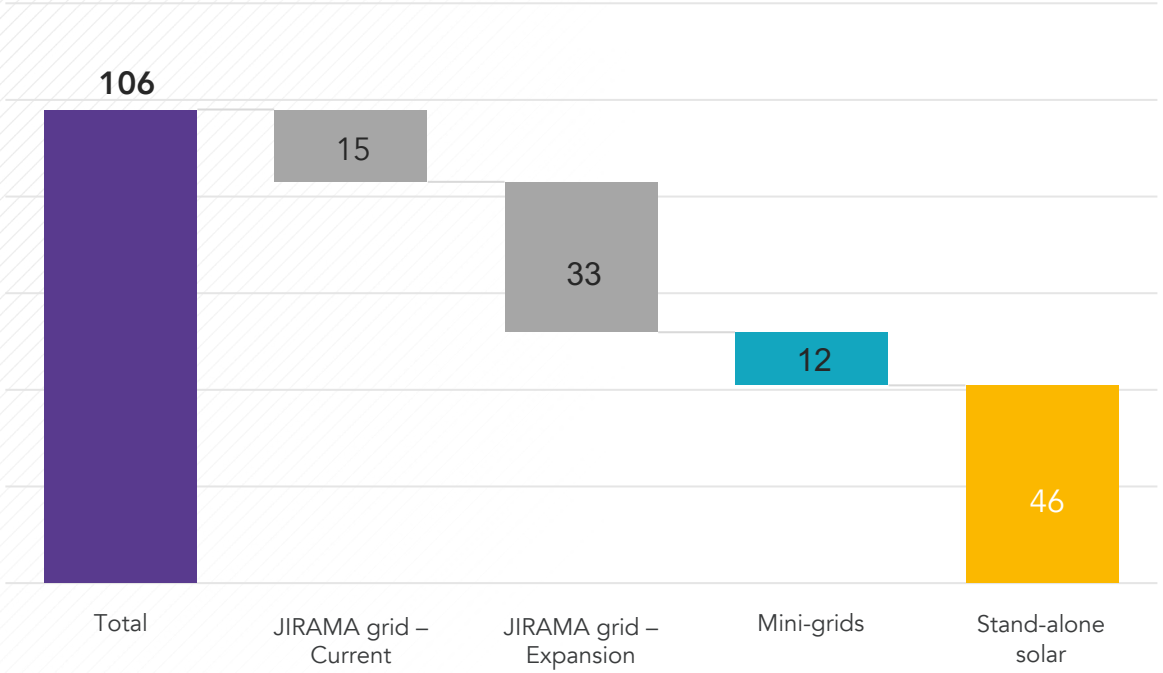
Solar power plant overview for every case

TYPE	ATTENDANCE[2]	JIRAMA	PRIVATE MG	STAND-ALONE
CSB1	Low	B2-Grid-PV1.2	B2-Grid-PV2.4	B4.5-PV2.4 B4.5-PV3.6 [2]
	High	B2-Grid-PV1.2	B2-Grid-PV3.6	B6-PV3.6
CSB2	Low	B2-Grid-PV1.2	B2-Grid-PV3.6	B6-PV3.6
	High	B2-Grid-PV2.4	B2-Grid-PV4.8	B8-PV4.8

Source: Projections from IEP report; (1) Some operators will already have a profitable and sustainable business model. As a result, the CSB will not need a stand-alone solar installation
Calculation details: Back-up [(238+226)*100%]+(512*80%)=874 ; Stand-alone calculations based on ongoing local projects; (2) Attendance if higher or lower than 200 patients/month.

For the 100 CHRDs, a case-by-case assessment should be considered as the range of energy-consuming equipment varies widely PROJECTIONS 2030

POTENTIAL CHRD MARKET ASSESSMENT



POTENTIAL MARKET:	Back-up solution[1]:	Stand-alone solution:
	54 HFs	**46 HFs**

Source: Projections from the PEI report; **Calculation details:** Back-up solutions [(15+33)*100%]+(12*50%)=54.

RECOMMENDED SOLUTIONS

Depending on the CHRD, **both medical and non-medical equipment vary** in type, number and energy requirements, given the diversity of health services on offer:

The question for the CHRD is then: **what is the purpose of electrifying?**

- **Ensuring a reliable power supply for priority services**
- **Reducing current electricity expenses**

It would therefore be useful to have a needs and energy audit for each CHRD1 and CHRD2 to assess the most suitable solutions (back-ups and stand-alone) according to: (i) the medical and non-medical equipment in operation; and (ii) the energy demand

A tailor-made solution is therefore necessary

Multi-dimensional solution - covering basic needs of CSBs through solar plants comprising 3 key components, i.e, solar modules, batteries and inverter

AS OF TODAY

As indicated in Chapter 2, the general situation in CSBs is as follows:

No access to electricity (75%) CSBs with access to electricity: suboptimal level Possibly a few lamps

Independent solar refrigerator (76%) No sterilization

TARGET SITUATION

The aim is to cover the basic needs of CSBs. To achieve this, we need to consider:

ELEMENTS REQUIRING ELECTRICITY

	CSB 1	CSB 2
Sufficient lighting	✓	✓
Sterilization	✓	✓
Refrigeration	✓	✓
Digitalization	✓	✓
Housing	N/A	✓

A MULTI-DIMENSIONAL SOLUTION

Generation and storage	• Solar panels • Inverter	• Batteries
Medical and non-medical equipment	• Lighting • EE equipment[1] (LED lamps, tablet)[2]	• Indoor wiring to standards • Sterilizer
Management	• Telemetry solution	

Source: SEforALL/PHC field visits, project working group, DSSB and DHRD/MSanP (1) EE: energy efficient. (2) key digitization element.

The roadmap will require USD 52 million in CAPEX and USD 31 million in OPEX over 10 years for the electrification of CSBs and CHRDs

CSB1 & CSB2

SOLAR PV PLANT	CAPEX (USD)	OPEX[1] (USD/AN)	NUMBER OF CSBs	TOTAL CAPEX (MUSD)	TOTAL OPEX (MUSD/YEAR)
B2-Grid-PV1.2	11,400	810	278	3.2	0.2
B2-Grid-PV2.4	12,900	810	297	3.8	0.2
B2-Grid-PV3.6	14,200	810	148	2.1	0.1
B2-Grid-PV4.8	15,600	810	151	2.4	0.1
B4.5-PV2.4	15,600	1,050	245	3.8	0.3
B4.5-PV3.6	17,000	1,050	105	1.8	0.1
B6-PV3.6	18,100	1,170	470	8.5	0.5
B8-PV4.8	21,200	1,350	480	10.2	0.6

A joint fundraising strategy will be developed and implemented as part of the roadmap.

CAPEX	OPEX (10 years)
USD 36 M	USD 23 M

CHRD

Reminder: an energy audit will be required on a case-by-case basis for CHRDs. Average values have been estimated here.

SOLAR PV PLANT	CAPEX (USD)	OPEX[1] (USD/YEAR)	NUMBER OF CHRDs	TOTAL CAPEX (MUSD)	TOTAL OPEX (MUSD/YEAR)
Back-up	120,000	6,500	54	6.5	3.5
Stand-alone	200,000	10,200	46	9.2	4.7

CAPEX	OPEX (10 years)
USD 16 M	USD 8 M

(1) Includes provision for equipment replacement (batteries, inverters).

Various business models are possible for the electrification of HFs, but without revenue to cover OPEX, none will be sustainable

Build-Operate-Transfer (BOT)

- TFP finances CAPEX and 2-3 years of OPEX
- A private operator is hired to design, purchase and install, and is responsible for maintenance for 2-3 years
- After 2-3 years, HF takes over OPEX
- *The most widespread case in Madagascar today*

Energy-as-a-Service (EaaS)

- ADER[1] or TFP selects a private operator or NGO to provide electricity services for at least 10 years
- CAPEX to be raised by the service provider from TFPs or investors (impact)
- Provider handles activities from design to O&M
- *A model that is increasingly applied in Madagascar with the development of the private mini-grid market*

(1) Via AP for rural electrification

Pico PV Pay-As-You-Go (PAYG) system

- A private operator makes small-scale stand-alone solar power systems available to HFs via a PAYG system: rental or sale of a system in exchange for regular payments via mobile payment
- If no payment is received, the system can be disconnected remotely
- *Not currently available in Madagascar for HFs; but is available for private users*

Hybrid A model

- A private operator finances CAPEX for stand-alone solar or MG systems
- It charges an electricity supply and O&M fee/rate to an independent project management unit; HF is supplied with electricity
- *Not available in Madagascar*

Hybrid B model

- TFP in collaboration with MSanP/MEH launches RfP for stand-alone solar plants for min. 50 HFs (cluster)
- TFP finances 100% of CAPEX (including installation)
- Private operator invoices HF per kWh on a pre-paid basis at a preferential rate (approved) to cover O&M via a 5-7 year renewable contract
- *Not available in Madagascar*

In all cases, HFs must pay O&M and equipment replacement costs (stand-alone solar plant) or a monthly bill/ top-up (private mini-grid or JIRAMA).

→ The most important point is to find stable sources of revenue to cover OPEX costs over the long term; then, any business model is *a priori* possible.

The sustainability and success of the business models depend on several key aspects

Better HF ability to pay over the long term

- Securing different sources of financing
- Optimizing electricity costs

Greater involvement of the private sector

- Enabling the private sector to play its role as a long-term provider of energy services (including O&M)

Appropriate sizing of the stand-alone solar plant

- Evaluating future medical and non-medical equipment
- Considering oversizing to generate additional revenue to cover operating costs (re-injection of surplus electricity into a grid, telephone recharging, etc.)

A more integrated and coordinated approach among key stakeholders

- Including all aspects to improve health services for the population, not just electrification
- Defining the roles and responsibilities of each stakeholder to achieve greater impact
- Coordinating all interventions

HF meets the *sine qua* non conditions for sustainable electrification

- Showing and proving that the HF is interested and wishes to obtain sustainable electrification (bottom-up)
- Meeting prioritization criteria in national planning (top-down)

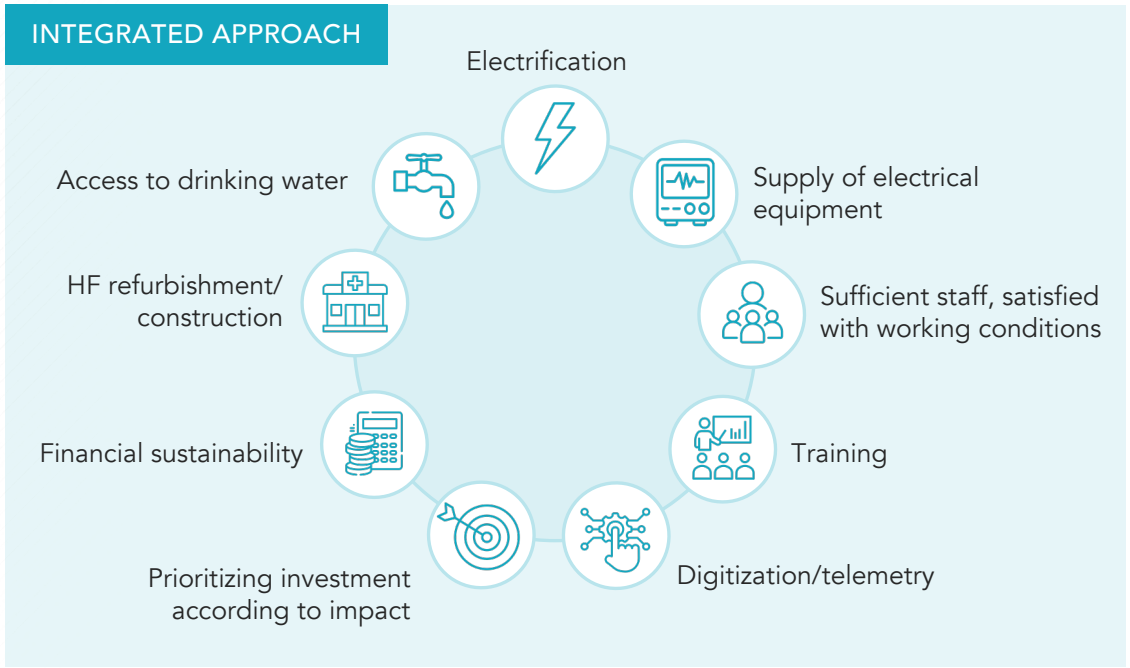
Targeted capacity-building

- Providing technical training in electricity for local and multi-site staff
- Raising awareness about responsible use and maintenance of electricity, including through visuals/posters at HF

CHAPTER THREE

Roadmap

The roadmap is based on the implementation of an integrated programme: a bottom-up, integrated approach to sustainably improve the healthcare services in Madagascar



The key is the impact that energy can have on health, not access to electricity *per se*. The roadmap is therefore not limited to the sustainable electrification of CSBs and CHRDs, but constitutes an **integrated programme for the improvement of healthcare services in Madagascar:**

- It adopts a **mainly bottom-up approach**, starting with HFs and their desire to improve the healthcare services they provide, notably through sustainable electrification.
- It integrates all the key elements contributing to **the improvement of healthcare services**, as well as all the players involved.

The integrated programme comprises 6 key elements in addition to the *sine qua non* bottom-up approach

6 KEY ELEMENTS OF THE INTEGRATED PROGRAMME (besides the bottom-up approach)

1. ROLE AS FACILITATOR

The integrated programme acts as a facilitator and coordinator between stakeholders and interventions

2. FINANCING SUPPORT

Supporting O&M and equipment replacement through local sustainability funds (not financed by TFPs and including local revenues) and a central support fund (financed by TFPs and others)

3. POOLING EFFORTS

Achieve economies of scale in purchasing (equipment and services), including through a batch approach

4. UNIFORMITY OF CRITERIA

Contributing to the uniform use of criteria, categories and standards through the programme's different stakeholders and interventions

5. LOCAL OWNERSHIP

Involving and empowering HFs in improving health services, including electrification (bottom-up approach)

6. INCLUSION OF DIFFERENT AREAS

All areas impacting on the improvement of healthcare services are taken into account

PHASE 1 – STRUCTURING & CLUSTER TESTING
2024-2025

PHASE 2 – DEMONSTRATION & IMPLEMENTATION
2025-2028

PHASE 3 – CONSOLIDATION
2029-2032

ROADMAP IN 3 STEPS

Phase 1 will focus on structuring the integrated programme with the key stakeholders and setting up a pilot project on the sustainable solvency of HFs

PHASE 1:
Structuring & Cluster Testing / 2024-2025

Main activities	• Institutionalizing the health-energy nexus working group, including all the key themes of the integrated programme (in committees or otherwise). • Sharing of information and promotion of synergies between TFP interventions for the electrification of HFs and other aspects, including the supply of medical equipment. • Formulation of the integrated programme, including TFP interventions, key stakeholders to be included (institutionalized working group) and bottom-up/top-down approach. • Designing a fundraising strategy for the programme. • Establishment of a multi-donor revolving fund to assist with HF OPEX (in the event of default at local/HF level) in the integrated programme. • Carrying out an audit of all 106 CHRDs to assess their needs and determine the most appropriate solar design for each CHRD. • Setting (minimum) standards for solar PV systems, equipment and tender documents. • Design and implementation of a cluster of 15-20 HFs to test business models (including OPEX financing) and bottom-up, integrated approach (e.g. via WB LEAD/DECIM). • Definition of a process (including managers/responsibilities) to ensure regular updating of HF electrification data in IEP DB/mapping (including health indicators). • Development of the monitoring and evaluation system of the integrated programme, including telemetry in each HF (including those responsible, periodicity and deliverables).
Main results	• Integrated programme formulated and budgeted, including synergies, ministerial coordination, institutionalized working group and creation of project management unit. • Circulation of initial elements of feasibility demonstration to ensure HF solvency. • HF electrification planning fine-tuned, including budget and key players. • The database is updated regularly, via telemetry, including planning.

Phase 2 will result in at least 1,700 HFs having stand-alone solar plants with more sustainable business models

PHASE 2:
Demonstration and Implementation / 2025-2028

Main activities	• Inclusion of lessons learned from cluster testing. • Development and launch of calls for projects for HFs so that they can benefit from integrated programme support (bottom-up approach). • Design and deployment of the programme's communication plan, including raising awareness of the call for proposals and the importance of sustainably improving healthcare services across the country. • Deployment of appropriate business models following the pilot for HFs already electrified and those to be electrified during this phase, in synergy with other integrated programme aspects. • Regular updating of the DB/map and IEP - HF part. • Ongoing monitoring of integrated programme implementation and specification of corrective measures where necessary. • Mid-term assessment of the integrated programme.
Main results	• At least 1,500 CSBs and CHRDs have applied to benefit from the integrated programme, including electrification or expansion. • ≈600+ HFs already electrified by previous interventions see their business model made more sustainable. • More than 1,000 CSBs are electrified (including 1,000 via DECIM) with levers to further ensure their sustainability. • At least 120 CSBs with access to electricity other than stand-alone solar have a backup solution installed (with stand-alone solar). • The database is regularly updated, specifically via telemetry. • Communication relating to the integrated programme is up and running. • The conclusions of the mid-term assessment are taken into account for phase 3.

Photo credit: TTA/Aides. LEAD project CSB2 Ambohimasina, August 2023

Finally, phase 3 will provide all CSBs/ CHRDs with sustainable access to reliable electricity, as well as improved health services

Photo credit: TTA/Aides. LEAD project CSB2 Ankilizato, August 2023

PHASE 3:
Consolidation / 2029-2032

Main activities	• Additional communication and capacity-building efforts with HFs that have not yet benefitted from the programme, including visits to beneficiary sites. • Additional fundraising to ensure programme success and sustainability. • Continued regular monitoring of integrated programme implementation and implementation of corrective measures where necessary. • Formulation and implementation of a sustainability strategy for improving healthcare services, including electrification of CSBs and CHRDs. The OPEX revolving support fund is an integral part of this, as is the multi-stakeholder, multi-dimensional committee. • End-of-programme assessment. • Discussions on extending the integrated programme to other HFs and other social infrastructures, particularly in rural areas.
Main results	• 100% of CSBs and CHRDs have a stand-alone solar plant and a sustainable business model, or have benefitted from an expansion of the installation and, accordingly, improvement of the health services offered. • Health indicators have improved significantly in CSBs and CHRDs. • The database is regularly updated, including via telemetry. • Communication relating to the integrated programme is up and running. • The sustainability strategy includes the conclusions of the end-of-programme assessment and envisages an extension of the scope to other HFs and other social infrastructures.

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SEforALL

Sustainable Energy for All (SEforALL) is an international organization that works in partnership with the United Nations and leaders in government, the private sector, financial institutions, civil society and philanthropies to drive faster action towards the achievement of Sustainable Development Goal 7 (SDG7) – access to affordable, reliable, sustainable and modern energy for all by 2030 – in line with the Paris Agreement on climate.

We work to ensure a clean energy transition that leaves no one behind and brings new opportunities for everyone to fulfil their potential.

SUSTAINABLE ENERGY FOR ALL

Global Energy Alliance for People and Planet
GEAPP

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