Application Form: Supplementary Cold Chain Equipment (CCE) Optimisation Platform Support- Application for additional Health Systems Strengthening (HSS) equipment, to be submitted only in January and May 2016

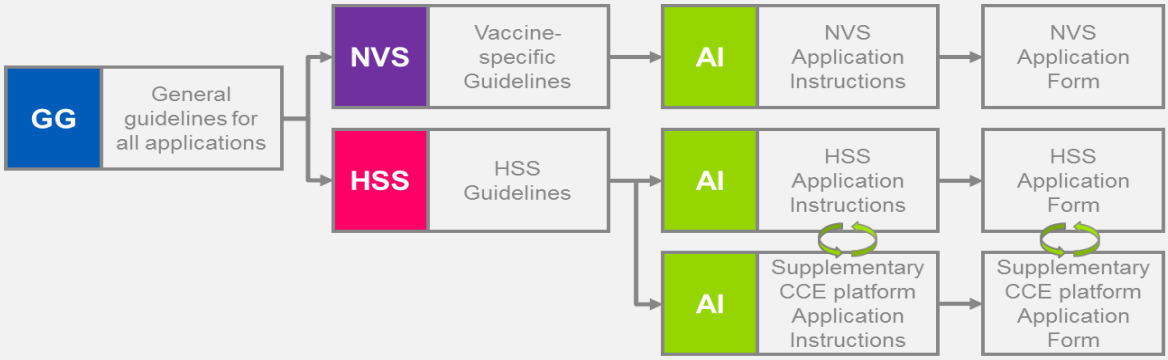
Deadlines for submission of application:
15 January 2016
1 May 2016[1]

Document dated: December 2015

NOTE: 2016 will be a development and learning period for the CCE optimisation platform. This supplementary material will be adapted and improved as Gavi gains experience in the implementation of the platform (including for applications submitted in September 2016).

Application documents for 2016:

Countries applying for all types of Gavi support in 2016 are advised to refer to the following documents in the order presented below:



Supplementary CCE platform Application Form

Purpose of this document:

This application form must be completed in order to apply for Gavi's CCE optimisation platform support. Applicants are required to read the Supplementary CCE optimisation platform application instructions prior to completing this application form. Applicants should first read the general guidelines for all types of support as well as the HSS guidelines before this document. The application form, along with any attachments, must be submitted in English, French, Portuguese, Spanish, or Russian.

Weblinks and contact information:

All application documents are available on the Gavi apply for support webpage:

[11] CCE optimisation platform application materials may be updated for this deadline based on learnings from the first applications.

www.gavi.org/support/apply. For any questions regarding the application guidelines or to submit the application form, please contact applications@gavi.org or your Gavi Senior Country Manager (SCM).

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PART A: SUMMARY OF SUPPORT REQUESTED AND APPLICANT INFORMATION

1 Applicant information		
Country name	*Haiti*	
Date	*14 February 2016*	
Name & job title	*Dr. Francois Jeannot, EPI Director*	
Email address	*francoisjeannot@yahoo.fr*	
Phone	*0050936494692*	
Total funding requested from CCE platform (US $)	*This should correspond exactly to the budget requested in Question 9 (detailed budget).* ***US$ 7,436,685***	
Does your country have an approved HSS grant on-going?	Yes X ☐	No ☐
	Indicate the ***end year*** *of the HSS* ***HSS grant 2017***	
Proposed CCE platform grant start date:	*Indicate the month and year of the planned start date of the grant*. 1 October 2016	
Proposed CCE platform grant end date:	*Indicate the month and year of the planned end date of the grant.* 31 December 2020	

2 Executive Summary *(Maximum 2 pages)*

Provide an executive summary of the application.

The application documents were prepared by the EPI Directorate, in collaboration with primary partners (OPS/WHO, UNICEF, CDC). These documents were initially presented and validated in a cold chain committee meeting, then in a meeting with the EPI technical committee (EPI-TC), and finally by the ICC on 11 December 2015, chaired by the Director General of the Ministry of Public Health and Population.

The EPI has six vaccines in its schedule (BCG, OPV, MR, TD, Pentavalent and Rota). The introduction of the new vaccines (Pentavalent in 2012 and Rota in 2014) into the routine EPI has presented enormous challenges for the country in terms of storage, handling and transportation.

Vaccination coverage in Haiti is low, as shown by the Pentavalent (Penta3=60% in 2014), and is below the objective of 80%.

The EPI supply chain is organised into three levels: (i) The central level; (ii) The department level consists of 10 departmental warehouses and three peripheral sub-warehouses; (iii) The institutional level. The EPI national programme must meet many challenges in order to reach its equity and coverage objectives: (i) Mobilisation of internal resources for vaccination activities; (ii) Quality of human resources at all levels (central, departmental, institutional) to promote good outcomes for vaccination activities; (iii) Strengthening the cold chain.

The supply chain improvement plan prepared after the 2013 EVM specifically emphasises economic and environmental optimisation of the cold chain, and a transition to solar equipment. Numerous activities have been conducted, such as: (i) Strengthening departmental warehouses' storage capacity by installing solar refrigerators; (ii) Training technicians to install and maintain solar refrigerators; (iii) Preparing an equipment maintenance plan; (iv) Preparing Standard Operating Procedures (SOPs) for maintenance; (v) Updating the cold chain equipment inventory.

According to the results of the physical inventory of cold chain equipment in October 2015, of the 753 functional health institutions in Haiti that perform vaccination activities, 42 (5.3%) do not have refrigerators. In total, 787 refrigerators were inventoried in health institutions, of which 74 (9%) are seriously out of order, 648 (67%) are powered by gas, and their average age is 8.14 years.

Given all of these problems, the EPI prepared a new cold chain upgrade plan, and undertook a large-scale plan to transition to solar equipment, which will reduce operating costs and transition to renewable energy.

The country decided to submit a CCE-OP application to Gavi to purchase, transport and install 721 SDD solar refrigerators (88 high-capacity SDD solar refrigerators for the departmental and peripheral warehouses and 633 two-compartment SDD solar refrigerator/freezers for health facilities, including 623 small-capacity refrigerators and 10 high-capacity refrigerators), 101 replacement part kits, 10 Arktek Cold Boxes, 410 coolers, 2,518 vaccine carriers, 27 continuous remote temperature monitoring systems and 2,142 fridge tags by 2020.

The equipment was chosen according to the following considerations:

- Total operating cost of equipment (using the TCO tool).
- Gavi's "Cold Chain Equipment Optimisation Platform" technological guide
- Lessons learned in terms of purchasing, installing, using and operating solar refrigerators.
- Technical directions concerning the selection of eligible equipment by the platform

The country based this choice on these criteria to choose solar refrigerators (TCW40SDD) from B-Medical for health facilities, and VC200SDD from Dulas for the departmental and peripheral warehouses. The choice of these types of refrigerators was dictated above all by the country's experiences, the desire to standardise equipment to facilitate operations and maintenance and also by these refrigerators' ability to produce freezer packs to organise outreach vaccination activities in the health facilities.

This will allow Haiti to resolve numerous problems.

- ***Availability of vaccines at all levels:*** this application will allow the country to equip all health facilities that do not have cold chains, and all newly-functional health facilities, refrigerators, to replace aging and non-functional refrigerators, to increase storage capacity and to reduce vaccine stock-outs.
- ***Vaccination access for the country's entire population:*** High-quality vaccines will be available for the entire population. Fifty-one percent of the country's total population lives in rural areas, and 49% live in urban areas, of which about 50% live in so-called "marginal" (suburban) areas. This project will allow health facilities to organise outreach activities in all of the very-difficult-to-access areas in order to reach all of these marginalised populations.
- ***Increased vaccination coverage:*** This project will, over time, increase vaccination coverage in Haiti. The populations that previously did not have access to vaccines due

to stock-outs or cold chain failures, or because of the difficulty of freezing freezer packs for outreach activities, will have regular access to vaccination services.

- ***Strengthening the supply chain:*** This project will free the EPI from purchasing and distributing propane gas, which is a major constraint. Resources and logistics for purchasing and distributing gas can be redirected toward reorganising and strengthening the vaccine and input distribution system.
- ***Equity between all departments:*** The project will expand cold chain coverage across the country. Cold chain coverage disparities between health facilities, municipalities and the various departments will be significantly reduced. Vaccination activities will be equitably organised at all levels with the same level of cold chain quality.
- ***Security and quality of vaccines and wastage reduction:*** The use of directly-ordered solar refrigerators will reduce outages and accidental freezing of vaccines. According to the results of a recent evaluation by the D-EPI, the average wastage rates by antigen for January-December 2014 are: BCG (36%), OPV (26%), Penta (13%), Rota (46%), MR (35%), TD (44%).
- ***Strengthening cold chain maintenance***: This application will allow the country to implement the cold chain maintenance plan, which has been prepared. This project will allow the country to better train technicians and to reorganise maintenance in compliance with the plan.
- ***Data***: this application will allow the country to strengthen the regular updates of the inventory, and to collect and analyse data on cold chain operations, and more specifically, on the operation of cold chain equipment.

3 Acronyms

Provide a full list of all acronyms used in this application.

Acronym	Acronym meaning
BCG	*Tuberculosis vaccine (Bacillus Calmette-Guérin)*
CCE	*Cold Chain Equipment*
CDC	*Centers for Disease Control and Prevention*
Cold chain	*Cold chain*
D-EPI	*Directorate of the Expanded Programme on Immunisation*
TD	Tetanus and Diphtheria vaccine
EDH	Energie d'Haiti (Haiti energy company)
Gavi	*Global Alliance for Vaccines and Immunisation*
EVM	*Effective vaccine management*
HPV vaccine	*Human Papillomavirus vaccine*
MSPP	*Ministry of Public Health and Population [Ministère de la Santé Publique et de la Population]*
Pentavalent	*Pentavalent vaccine*
EPI	*Expanded Programme on Immunisation*
SOP	Standard Operating Procedures
cMYP	comprehensive Multi-Year Plan

PQS	Performance, Quality and Safety (prequalified products)
PROMESS:	Programme des Médicaments Essentiels/Essential drugs programme
WHO/PAHO	Pan-American Health Organisation/World Health Organisation
Rota	Rotavirus vaccine
MR	*Measles/rubella vaccine*
SELF	*Solar Electric Light Fund*
SNADI	Système National de Distribution et d'Approvisionnement des Intrants/National system for distributing and supplying inputs
CCT	*Cold chain technician*
TCO	*Total cost of operation/ownership*
UNICEF	*United Nations Children's Fund*
UNOPS	*United Nations Office for Project Services*
IPV	*Inactivated polio vaccine*
OPV	*Oral Polio Vaccine*

4 Signatures

4a. Government endorsement

*Include Minister of Health and Minister of Finance endorsement of the HSS proposal – **Mandatory Attachment #1.***

We, the undersigned, affirm that the objectives and activities of the Gavi proposal are fully aligned with the national health strategic plan (or equivalent), and that the funds for implementing all activities, including domestic funds and any needed vaccine co-financing, will be included in the annual budget of the Ministry of Health.

Minister of Health (or delegated authority)	**Minister of Finance** (or delegated authority)
Name: Dr Florence Duperval Guillaume	Name:
Signature	Signature
Dated:	Dated:

4b. Health Sector Coordinating Committee (HSCC) endorsement

*Include HSCC official endorsement of the HSS proposal – **Mandatory Attachment #2***
Include a signature of each committee member in attendance and date.

Mandatory Attachment #2: HSCC/ICC endorsement of proposal

We the members of the HSCC, or equivalent committee met on 11 December 2015 (date) to review this proposal. At that meeting we endorsed this proposal on the basis of the supporting documentation which is attached. The minutes of the meeting endorsing this proposal are attached to this application.

Please list all committee members	Title / Organisation	Name	Sign below to confirm:	
			Attendance at the meeting where the proposal was endorsed	Endorsement of the minutes where the proposal was discussed
Chair	**MSPP**			
Secretary	**D-EPI/MSPP**	**Dr Jeannot FRANCOIS**		
MOH members				
Development partners				
CSO members				
WHO	**Representative**	**Dr Jean Luc PONCELET**		
UNICEF	**Representative**	**Mr Marc VINCENT**		
CDC	**Director**	**Dr David LOWRANCE**		

PART B: APPLICATION OBJECTIVES

5 Description of the impact of the supply chain, specifically cold chain equipment, on the coverage and equity goal *(approximately 1 page)*

What coverage disparities exist? What supply chain challenges have been created or exacerbated by cold chain equipment that is non-functioning or poorly functioning? What impact does the supply chain have in terms of coverage and equity in your country? What is the impact of cold chain equipment on coverage and equity in your country?

*Provide **mandatory attachment no. 4**: the most recent EVM improvement plan and **mandatory attachment** no. 5: most recent progress report on implementation of the EVM improvement plan.*

The vaccination entities often have stock-outs of propane gas and vaccines, and there are frequent refrigerator outages. In 2014, BCG was stocked out for two months, MR was stocked out for two months, and the Pentavalent vaccine was stocked out for one month.

This application will allow Haiti to strengthen the cold chain's capacity, reliability and quality in order to make vaccines available at all levels. The vaccine and input distribution system, which is theoretically based on the “Puch” system, is poorly organised due to difficulty in mobilising resources and logistics for the supply chain. This project, with the installation of directly-ordered solar refrigerators will result in savings when purchasing and distributing propane gas, and also in operating equipment. This may be used to strengthen supplies of vaccines and inputs at all levels. Logistics and human resources (cold chain technicians) will

be more focused on distributing vaccines and maintaining equipment.

National data show that approximately 90% of health facilities in Haiti must conduct outreach activities to reach the necessary coverage levels. This application will make it possible to provide all health facilities with refrigerators that can freeze cold packs, which will allow them to organise outreach activities in order to reach difficult-to-access populations. This will make it possible to bring vaccines and vaccination services closer to parents, especially mothers of children who were previously required to walk for more than two hours in order to reach vaccination sites and have their children vaccinated. Cold chain equipment coverage will be expanded to all of Haiti's zones. Health facilities that do not have equipment will be provided with refrigerators. Cold chain coverage in Haiti will increase. More vaccines will be mobilised for all of the target populations in order to increase coverage for all antigens. Installation of directly-ordered solar refrigerators in all health facilities that are more robust and reliable will improve the availability of vaccines and freezer packs at all times for community vaccination activities. And will significantly reduce vaccine wastage at the institutional level, because a large amount of vaccine wastage is currently caused by cold chain breakdowns due to lack of propane gas at the health facilities.

Equity targets are included because the country will be able to expand their supply chain scope for vaccination to health facilities that previously did not have cold chain equipment. All populations in Haiti (rural and urban, boys and girls) will equitably receive vaccines, due to availability of the cold chain at all levels. The very isolated rural areas and marginalised urban areas will have access to vaccination services due to this project, and health facilities will be able to regularly organise community activities.

In the context of this project, priority will be given to functional health facilities that do not have refrigerators, and to difficult-to-access areas. Vaccination services will be offered to all segments of the population without regard to socio-economic status or gender. New health facilities will be provided with cold chain equipment and vaccination posts and intermediate vaccine storage posts will be created to facilitate the outreach strategy.

PART C : COLD CHAIN EQUIPMENT STATUS

6 Justification for the specific need to rehabilitate and expand the country's cold chain equipment *(approximately one page)*

Describe the country's current cold chain equipment situation, describe your rehabilitation and expansion request, and explain on what basis this is necessary.

Provide: ***Mandatory Attachment #6****: Cold chain equipment inventory with breakdown by facility, and* ***Mandatory Attachment #7****: cold chain rehabilitation and expansion plan*

Procuring high-quality vaccines and strengthening the cold chain are crucial issues facing the Haiti EPI. The EPI, with support from its primary partners, is implementing measures to strengthen vaccine and cold chain management entities at all levels (central, departmental and health facilities). This project will relieve the primary constraints, specifically: (i) cold chain availability at all levels, (ii) strengthening storage capacities, (iii) cold chain reliability, (iv) the equipment's compliance with PQS standards at all levels, (v) improved organisation of the supply chain, particularly the availability of logistics to distribute vaccines and inputs, (vi) strengthening the temperature monitoring and surveillance system, (vii) substantial reduction in vaccine wastage.

This project will provide new institutions with higher-performing solar refrigerators, replace all

refrigerators that do not meet PQS standards (gas and domestic refrigerators). Therefore, health institutions that provide vaccinations will be provided with high-performing refrigerators. Propane gas will no longer be used to power the cold chain, which will reduce vaccine stock-outs. The remote temperature monitoring system will be expanded to all departmental and peripheral warehouses.

This project will definitively resolve problems related to: (i) propane gas supplies, (ii) vaccine and input supplies for all health facilities, (iii) cold chain coverage for health facilities, (vi) [sic] equipment maintenance, (v) freezing cold packs to organise community activities. Vaccination services will be offered everywhere, to the entire population without regard to gender, socio-professional category or place of residence (rural areas, urban areas, difficult access, easy access, etc.). All health facilities will be equipped with refrigerators that will allow them to conduct outreach activities.

The installation of new equipment through this project will make it possible to meet storage needs by 2020 in 100% of departmental and peripheral warehouses. By 2020, all absorption refrigerators (67%) of the cold chain equipment base will be replaced with directly-ordered solar refrigerators. Health facilities that do not have refrigerators, and new health centers created within the next five years will be equipped with solar refrigerators. Therefore, overall, vaccine wastage at the peripheral level that is caused by the vials being exposed to heat (shown on the VVM) or freezing temperatures will be considerably reduced. Likewise, vaccine stock-outs will be minimised.

Provisional data for 2015 show that approximately 26% of municipalities have Penta3 coverage <50%, and 43% have Penta3 coverage between 50% and 80%. This poor performance is primarily related to vaccine and propane gas supply difficulties and to the lack of availability of a functional cold chain, especially in difficult-to-access municipalities. This project will sustainably resolve all of these constraints. The populations that were previously not reached because of cold chain breakdowns, vaccine stock-outs or logistical problems will now be reached. This will enable Haiti to reach Penta3 coverage of at least 80% in 100% of municipalities by 2020.

7 Expected impact of the rehabilitation and expansion plan on design improvements to the supply chain, for the purpose of improving efficiency/effectiveness (*approximately one page)*

Describe how the proposed cold chain equipment rehabilitation and the expansion plan will impact the system's design, and will contribute to the supply chain's efficiency (taking into account new and discontinued cold chain equipment)

Provide ***Mandatory attachment no. 3:*** *EVM evaluation report and* ***optional attachment no. 13****: health system constraints.*

The physical inventory of cold chain equipment, updated in October-November 2015 gives an overall picture of the situation (number of equipment, location, operating condition, etc.).

The cold chain is organised in three levels in Haiti:

Central level: The central level currently has 5 working cold rooms, including 4 positive cold rooms, with gross capacity of 130,000 litres, and one negative cold room with gross capacity of 20,000 litres. Current positive capacity will be insufficient beginning in 2018. Net required

positive capacity will be 34,151 litres in 2020. The deficit will be remedied through installation of a 40 m3 positive cold room in 2018. Negative capacity is sufficient until 2020.

Departmental level and health facilities:

According to the inventory data, the equipment breakdowns are as follows:

- ***Breakdown of equipment according to age:*** According to inventory data, 44% of equipment is newer than five years, 24% is between five and eight years old, and 31% is eight years old.
- ***Breakdown of equipment according to operating status:*** 85% is in good condition, 8% is seriously out of order, 3% is minorly out of order and can be repaired, and 4% has not yet been installed.
- ***Breakdown of equipment according to power source*** *:* 67% of equipment is powered by gas, 28% is solar and 5% is electric.
- ***District storage facility capacity:*** Total installed capacity is 14,703.5 litres. No departmental warehouse has sufficient capacity to store vaccines beginning in 2017, except the Nippes warehouse. Additional equipment needs are estimated at 90 high-capacity solar refrigerators (more than 100 liters each).
- ***Storage capacity in the health facilities:*** According to inventory data, 73% of equipment installed in health facilities are powered by gas, 19% are solar refrigerators and 8% are domestic refrigerators. We plan to replace all non-PQS refrigerators by 2020, with directly-ordered solar equipment.
- **The introduction of new vaccines and supplemental immunisation activities are included in the cold chain expansion.**
- ***Health facilities that do not have refrigerators*** are included in this plan. They will be provided with refrigerators to allow them to offer vaccination services to all populations, without regard to socio-economic category, residential area (rural or urban) and gender (boys or girls)
- ***New health facilities that may be opened:*** are included in this plan

Haiti is requesting support from Gavi to strengthen capacities in the departmental and peripheral warehouses, to install new refrigerators in the health facilities that do not have them, and to replace all non-PQS refrigerators in the health facilities.

The project will, over time, make it possible to purchase and install, at the departmental and health facility level:
-88 high-capacity (132 litres) SDD solar refrigerators for the departmental and peripheral warehouses
-633 two-compartment SDD solar refrigerator/freezers for health facilities, including 623 small-capacity SDD solar refrigerators (36 litres) and 10 high-capacity SDD solar refrigerators (102 litres) for the very large health facilities with large populations.
-10 Arktek cold boxes for health facilities whose storage needs are less than 5 litres and that do not do outreach activities.

Installing this equipment in the departmental warehouses will make it possible to close the storage capacity gap of approximately 25% in those warehouses by 2020. The three municipal offices in the Ouest department and the five offices in the Port-au-Prince metropolitan area will play a full role as distributing warehouses. Health facilities will all be equipped with refrigerators that meet PQS standards.

Installing new refrigerators and replacing existing ones will be done according to four priorities defined by the country based on an analysis. They are: (i) **Priority 1:** health facilities that do not yet have refrigerators, or which have domestic refrigerators or absorption refrigerators that are out of order, (ii) **Priority 2:** absorption refrigerators older

than eight years, (iii) **Priority 3:** all absorption refrigerators that are newer than eight years old, (iv) **Priority 4:** newly functional or newly built health facilities.

PART D : SUPPORT FOR THE APPLICATION

8 Quantity and total budget requested for cold chain equipment (including platform and country's joint spending)

*Please use the **cold chain equipment platform optimisation budget form** to indicate the annual amount of aid requested, both in terms of the number of units and the cost (including purchase and service costs). State and justify all additional requirements (for example manufacturers, characteristics)*

CCE Optimisation Platform application

www.gavi.org/XXXXXXXXXXXX <LINK TO BE UPDATED>

9 Justification for the scale and technology requested (*approximately ½ page)*

Given the current or anticipated design of the country's cold chain equipment system, please provide justification that your application is correctly scaled, and targets the appropriate technology (number, capacity, type) to resolve the constraints that have been identified.

*Provide: **Mandatory attachment no. 8:** Equipment selection and **Optional attachment no. 14**: Total grant cost (if applicable)*

The process of transitioning Haiti's cold chain to solar power on a large scale began in 2011-2012, with the installation of solar refrigerators (Vestfrost MKS 044), which did not provide the expected results. In 2014, the country received CDC financing through UNICEF, to purchase and install new, high-capacity SDD solar refrigerators (B-Medical TCW3000SDD) to strengthen the departmental warehouses' capacities. These were installed by SELF, and they have worked very well. At the end of 2014, a total of 29 new SDD refrigerator/freezers, small-capacity with two compartments (B-Medical TCW40SDD) for health facilities were purchased and are being installed in Haiti.

The vast majority of health facilities in Haiti conduct outreach activities that require the use of frozen cold packs.

The selection of solar SDD refrigerators for the two levels of the supply chain is due to: (i) programmatic needs; (ii) past experiences, (iii) standardisation of the equipment base and maintenance needs, (iv) total cost of ownership.

-***Lack of a reliable electricity network in Haiti:*** Haiti decided to provide departmental warehouses and health facilities with solar refrigerators to lighten the burden of purchasing and distributing propane gas, because the electricity network is not at all reliable in Haiti. The national electricity grid is available only in major urban centres. Inventory shows that only 29% of health facilities are connected to the national electricity grid (EDH) while 71% are not. It is very

important to note that the national electricity grid in Haiti is not at all reliable. The electricity supply is irregular (less than four hours per day) and cuts out in most of the urban centres.

-***Programmatic needs****:* Approximately 90% of the health facilities organise outreach vaccination activities in the community, in order to reach the target populations. In order to do this, they need frozen cold packs to store vaccines in vaccine carriers.

-***Past experience:*** The lessons learned from installing SDD refrigerators, the availability of private entities (SELF) and human resources (MSPP, UNICEF, CDC, OPS/WHO) that are well trained and have high-level technical skills to install and maintain SDD solar refrigerators.

-***Standardisation of the equipment base and maintenance procedures:*** Haiti has decided to standardise the cold chain equipment base in order to facilitate management, monitoring and maintenance.

-***Total cost of ownership***: Currently, the less expensive pre-qualified equipment with two compartments and meets [sic] the country's needs and the Gavi platform eligibility requirements is very limited. The PATH TCO tool was used to compare prices on the various models in the PQS. Concerning health facilities' primary needs, the refrigerator/freezer was chosen (B-Medical TCW40SDD) and for the departmental and peripheral warehouses, the Dulas VC200SDD refrigerator was selected.

PART E: IMPLEMENTATION DETAILS

10 Description of equipment purchase and roll-out *(Approximately one page)*

Explain how you plan to manage the equipment purchase and deployment, and ensure that this is done according to your plans and in a timely manner.

Provide: ***Mandatory attachment no. 9*****:** *Strategic deployment plan and* ***Optional attachment no. 15:*** *National procurement policy.*

The selection of all of the equipment that will be purchased in the context of this Gavi application was done by the cold chain committee, a technical working group chaired by the D-EPI/MSPP, and whose members include the OPS/WHO, UNICEF, CDC, UNOPS, and SELF. The cold chain committee will coordinate implementation of the project. All technical aspects related to implementing this project will be discussed in the cold chain committee meeting and then submitted for validation to the EPI Technical Committee.

A detailed purchase plan has been prepared and will be reviewed each quarter, based on the projections made by the cold chain committee. The ordering process, the projected supply time frames and partial deliveries are planned for in the Procurement Plan.

The MSPP, in cooperation with the primary partners, has decided to order the equipment through UNICEF. Purchasing equipment through UNICEF will allow the country to, on the one hand, benefit from better purchase prices (economy of scale) and on the other hand, to benefit from customs release fees. The equipment ordered through UNICEF is exempt from customs duties. All administrative procedures related to customs release, storage and port pickup will be handled by the appropriate UNICEF departments. Once the equipment is received, it will be stored in the UNICEF or MSPP warehouse before being deployed.

A detailed schedule for purchasing, transporting, distributing and installing the equipment in the field has been prepared, to facilitate rapid implementation of the project. Once we receive notification of funding received from Gavi, the MSPP will organise a meeting with the CDC, UNICEF and SELF in order to very quickly make contact with manufacturers to place the orders.

The cold chain committee will support the MSPP in monitoring equipment orders.

-***The MSPP:*** Will coordinate all project activities, through the cold chain committee. It has four qualified technicians at the central level and 10 technicians at the departmental level. In addition, the MSPP has three trucks to transport equipment in the field, and three pickup trucks to transport technicians for installation work. With support from its partners, the MSPP will handle financing for the technicians' participation in installing the equipment.

-***UNICEF:*** Will order and store the equipment that is ordered. It has a skilled team and proven experience in this area, to participate in executing the project.

-***SELF:*** A private entity (NGO) specialised in solar cold chain work with extensive experience in Haiti and other countries. It has been selected by the MSPP and its partners to install all equipment in the field. It has already installed 78 B-Medical TCW2000SDD refrigerators in the country's departmental warehouses and is currently installing 29 B-Medical TCW40SDD refrigerators in health facilities on behalf of the CDC. Likewise, it has a contract with the CDC to repair and optimise Vestfrost solar MKS044SDD refrigerators and train MSPP technicians.

SELF will transport the equipment from the Port-au-Prince warehouse to the installation sites. It will be responsible for all installation activities related to this project. Initially, there will be discussions between SELF and the manufacturers concerning the technical aspects related to installing the equipment.

-***OPS/WHO:*** Will provide technical support through a specialised consultant to provide advice and monitor coordination.

-***CDC:*** Will provide support for financing the country's share, and also technical support.

Equipment will be deployed and installed in the field based on priorities defined in the priorities section.

Equipment will be installed by the SELF technicians, supported by MSPP technicians who have completed various trainings on installing new-generation solar refrigerators. The technicians for installing all equipment purchased in the context of this plan will be locally mobilised. The expertise exists in Haiti, through SELF, the MSPP and the UNICEF Haiti office. The departmental technicians (total of 10) from the MSPP will also be mobilised to support the various teams in the field.

On the local level (in Haiti), SELF has three competent and well-trained and experienced teams, who may be immediately mobilised. Additionally, SELF may hire and train other technicians who may be working within a few months. The MSPP also has two well-trained and experienced teams at the central level.

So, five teams of technicians (three from SELF and two from the MSPP) may be simultaneously mobilised and deployed in the field as soon as 2017, to install the project's first equipment. All of the teams will work under the responsibility and supervision of the SELF technicians, who will guarantee the installations' quality.

In addition to the installation technicians, supervisors from the MSPP (1), SELF (2), UNICEF (1) and OPS/WHO (1) will be deployed in the field, to supervise the installation work.

The equipment deployment plan has been prepared based on the cold chain inventory. The equipment for facilities that do not have refrigerators, and the replacement of old and obsolete refrigerators will be done according to the previously-defined priorities. The schedule will be provided to the departments and health facilities in a timely manner, to facilitate the teams' work in the field. Likewise, equipment user training will be done on site at the time of installation. Therefore, the health facilities will be informed one month in advance of the technicians' arrival to install the refrigerators. Installation of a solar refrigerator lasts, on average, 2.5 to 3 days, given the site evaluation, the travel time and unexpected events. Under good conditions, a qualified and well-equipped team can install up to 150 refrigerators a year and even more.

Thus, in the context of this plan, we plan to install 201 pieces of equipment for vaccine storage (refrigerators + long-lasting cold boxes) in 2017, 184 refrigerators in 2018, 177 refrigerators in 2019 and 169 refrigerators in 2020.

The order for the first refrigerator batches can be initiated in October 2016, and receipt can occur in February 2017.

Installation of the equipment can begin in March 2017 for Priority 1 refrigerators (equipment in health facilities without refrigerators, replacement of domestic refrigerators and absorption refrigerators that are out of order), and also the refrigerators to strengthen capacity at the departmental warehouses. Then in 2018, it will be time to install Priority 2 refrigerators (absorption refrigerators older than 8 years). Beginning in 2019, it will be time to install Priority 3 refrigerators (newly functional or newly-built health facilities) and Priority 4 refrigerators (absorption refrigerators newer than 8 years).

11 Maintenance of purchased CCE (approximately ½ page)

Describe your plans for maintenance and repairs (which must guarantee the lifespan of the CCE financed by the platform). Please explain how the activities related to staffing, training and routine maintenance will effectively contribute to managing and maintaining equipment.

Provide ***Mandatory attachment no. 10****: maintenance plan*

Maintenance is one of the EPI's supply chain weaknesses. In order to make maintenance effective, the D-EPI has prepared a maintenance plan to guarantee vaccine quality and increase cold chain equipment life.

Maintenance will be organised in four levels:

- ***Preventive Maintenance:*** Will be provided by users who are trained when the equipment is installed. They will be supported by departmental cold chain technicians.
- ***Corrective maintenance 1 (inspecting equipment, detecting outages, minor breakdowns, etc.):*** This is provided by departmental cold chain technicians.
- ***Corrective maintenance 2:*** (major repairs), who have more skills than the departmental technicians. This is provided by central level technicians who are better trained and have better equipment.
- ***Central cold room maintenance:*** This is provided by a specialised private company under the supervision of MSPP technicians.

Standard Operating Procedures (SOPs) have been developed to help users correctly perform the various maintenance procedures.

The maintenance plan also includes training for technicians and users, supervision, purchasing replacement parts and providing technicians with tools. The plan will be financed by the MSPP and its partners. In the context of strengthening the cold chain, the CDC has, for several years, supported the MSPP in purchasing and installing new equipment and in maintaining old equipment. SELF has had a contract with the CDC since 2014, to assist the MSPP in maintaining solar equipment. This assistance will continue. The MSPP has qualified technicians at the central level and in all departments, to provide equipment maintenance. These technicians also have maintenance tools which must be increased in order to allow the technicians to perform better. The EPI was provided with three trucks by the Brazilian development agency in 2014, to supply the departmental warehouses, and also with Gavi HSS financing for two pick-up trucks which were purchased for supply missions, field supervision and maintenance missions. During quarterly vaccine supply missions to the departments, the technicians may also perform preventive and curative maintenance.

13 Source and certainty of country co-investment funding *(Approximately ½ page)*

List all the sources of funding used to fund the country co-investment and describe their timing and level of certainty

Co-financing for the complete overhaul of the cold chain through Gavi's CCE-OP platform will be provided by the MSPP and its partners. For several years, the country has been progressively transitioning to solar-powered cold chain equipment, with support from its primary partners. To this end, the CDC and other partners have committed to assist the country in implementing the EVM improvement plan. Thus, the CDC has prepared a financing plan to support strengthening of the cold chain. Through the UGP, the CDC financed the purchase of 29 B-Medical TCW40SDD refrigerator/freezers, and the repair of 153 Vestfrost MKS044SDD refrigerators through a service contract with SELF. The process of installing the new B-Medical TCW40SDD refrigerator/freezers and the repair of the 153 Vestfrost MKS044SDD is in progress.

In the context of this application to the Gavi platform, the CDC has committed to support the country's co-financing.

In addition, the country envisions that in the next Gavi-HSS grant, participation in CCE-OP co-financing could be included.

13 Technical assistance related to CCE

Is the country currently receiving technical assistance related to CCE?	Yes ☐	No X ☐
	Indicate the type, duration and provider of technical assistance	
Future technical assistance planned	*Describe your plans to request additional technical assistance in the next 3 years (if any).* Since June 2014, the country has received support from a consultant in the context of strengthening the cold chain and managing vaccines with CDC	

	funding and then Gavi funding in the context of the CTA (Country-Tailored Approach). This technical assistance will provide considerable value added for monitoring the implementation of the EVM improvement plan. This assistance may be useful for monitoring implementation of activities in the context of this project. It is also important to emphasise that SELF's presence in the country may facilitate correct implementation of the project's activities in the field.

14 Import tariff exemptions for CCE *(Approximately ½ page)*

Describe the actions that you took to secure import tariff exemptions for CCE and explain the current status of the tariff exemption waiver (accepted, rejected, pending)

Provide: ***Mandatory Attachment no. 11****: Proof of status for CCE tariff exemptions waiver*

Equipment purchases in the context of this application will be done through UNICEF. Therefore, all equipment will be exempt from customs fees, and duty-free certificates will automatically be provided for the equipment. UNICEF, in its capacity as a United Nations entity, receives customs exemptions for importing equipment and products into the country.

PART F: M&E DETAILS

15 Description of the monitoring system currently in use in the country *(Approximately 1 page)*

List the relevant CCE indicators currently tracked by the country and detail the mechanisms used to collect the data and validate its efficiency.

Provide: ***Mandatory Attachment #12****: National M&E Plan*

For monitoring of this project's implementation, which will resolve the EPI's main constraints and specifically supply chain constraints, an effective monitoring system will be put in place. All activities related to this project and their impacts will be monitored using very specific indicators. Tools to collect and analyse data on project implementation on a monthly basis will be developed. Aspects related to cold chain operations have already been integrated into the monthly health facility vaccination report.

The primary indicators that will be collected and analysed are:

-Number of coordination meetings organised

-Number of equipment pieces ordered, as compared to the projected number

-Number of equipment pieces installed, as compared to the projected number

-Number of health facilities equipped with new equipment

-Proportion of functional equipment

-Proportion of equipment meeting PQS standards, as compared to initial levels

-Cold chain equipment coverage rates for health facilities

-Average equipment age

-Percentage of health facilities with functional cold chains

-Number of facilities per department with functional refrigerators

-Number of facilities per department with out-of-order refrigerators

-Number of health facilities with more than 9 alarms for temperatures +10 degrees Celsius

per month and per department

-Number of health facilities with more than 9 alarms for temperatures below 0.5 degrees Celsius per month and per department

-Number of preventive and corrective maintenance procedures completed per month and per department.

A database will be developed and installed at the central level and in each department. At the central level, this database will be managed by the D-EPI's logistics department.

All devices will be equipped with remote temperature monitoring systems. This system is currently installed in the departmental warehouse in Gonaives, which allows real-time remote monitoring of all refrigerators.

16 Description of the country plan to report on the contribution of funded CCE to the vaccination programme and the supply chain system strengthening *(Maximum 1 page)*

Describe how the country plans to report on the CCE platform indicators detailed in the Supplementary CCE platform Application Instruction. Annex 3 Table 7.

In the context of this application, a reporting system will be implemented in order to monitor changes in the field activities. The MSPP, through the D-EPI's logistics department will be responsible for preparing the various reports.

The technical reports on how the work is progressing will be done on a monthly basis. The various reports that are prepared will first be presented and discussed in a cold chain committee meeting before being shared with all partners and Gavi. Financial reports will be done according to Gavi's usual procedures.

SELF, which is the technical entity responsible for installing all cold chain equipment purchased in the context of the platform, will also provide a monthly report detailing all of the activities conducted.

The three-level configuration of the EPI supply chain (central, departmental and institutional level) integrates perfectly with the levels of the MSPP's other programmes. No changes to this configuration are planned for the moment. However, it may be optimised by changing the peripheral warehouse into five municipal offices for the Port-au-Prince metropolitan area and three offices for the Ouest department in order to facilitate supplying the health facilities with vaccines and inputs, and other health products.

It is important to note that the MSPP, with support from its partners, plans to implement a national procurement system, called SNADI (national system for supplying and distributing vaccines) for all health inputs and vaccines. The EPI will work closely with all other programmes in this system which will be implemented by the MSPP. Distribution of vaccines and inputs will be one of the essential components of SNADI. This system will offer integrated supply management (drugs, vaccines and other inputs) for all programmes.

The project will strengthen this integrated supply system. The MSPP may provide this system with the logistical means necessary to supply inputs. Qualified human resources are available.

The D-EPI has three trucks at the central level which can be used to supply departmental warehouses and certain health facilities with vaccines and inputs, and also to perform

supervision and cold chain maintenance.

In addition, this application aligns perfectly with the priorities stated in the EVM improvement plan completed in 2013.

CCE platform indicator	**Description of plan to report on indicator** (incl., baseline, data source, data collection/validation, reporting frequency)
Number of equipped facilities replacing CCE with higher performing equipment (ILR, SDD or long-term passive devices)	Reference basis: 2015 cold chain equipment inventory Regular data updates, each time equipment is installed. Annual report on cold chain equipment inventory updates.
Number of facilities previously without equipment, newly equipped with ILRs, SDDs or long-term passive devices	Reference basis: 2015 cold chain equipment inventory Regular data updates, each time equipment is installed. Annual report on cold chain equipment inventory updates.
Indicators proposed by the country to take into account appropriate equipment maintenance; for example the percentage of facilities with operational cold chains	Reference basis: 2015 cold chain equipment inventory Regular data updates, each time equipment is installed. Annual report on cold chain equipment inventory updates. Use monthly reports from health facilities to determine the percentage of health facilities with working cold chains.
Submission of yearly updated CCE inventory	Annual report based on cold chain equipment inventory updates
Country-specific indicator 1 *(please detail)*	
Country-specific indicator 2 *(please detail)*	
Country-specific indicator 3 *(please detail)*	

PART G: LIST OF MANDATORY AND OPTIONAL ATTACHMENTS

Mandatory Attachments		
No.	**Attachment**	**File link**
1	Signature Sheet for the Minister of Health and Minister of Finance, or their delegates	
2	Signature Sheet for HSCC (or equivalent) endorsement	
3	Effective Vaccine Management (EVM) Assessment report (conducted within the preceding 5 years)	
4	Status of most recent EVM Improvement Plan (or provide justification and identify a plan for developing an improvement plan)	
5	Most recent Progress Report on the EVM Improvement Plan Implementation (should not be older than 6 months prior to application submission or provide justification as to why this is not available)	
6	CCE inventory and facility segmentation (*detailed in Application Instructions*)	
7	CCE rehabilitation and expansion plan (*detailed in Application Instructions*)	
8	Equipment selection (*detailed in Application Instructions*)	

Mandatory Attachments		
No.	**Attachment**	**File link**
9	Strategic deployment plan (*detailed in Application Instructions*)	
10	Maintenance plan with financing (*detailed in Application Instructions*)	
11	Proof of status for CCE tariff exemptions waiver	
12	National M&E Plan	

Optional Attachments		
No.	**Attachment**	**File link**
15	Health system bottleneck analysis	
16	Total cost of ownership analysis (see TA packet on Tech Net)	
17	National Procurement Policy	