***The financial component***

| **Summary** | **Indicators** |
| --- | --- |
| **Overarching project goal**  Complete transformation of the domestic refrigerator sector to climate friendly, energy efficient appliances, the distribution of these green fridges within the country and old fridges to be recycled. | **Indicators**:   * **Placed on the market:** number of climate friendly, energy efficient refrigerators placed on the market (1.1 to 1.2 Mio per year within the NSP period) * **Emission reductions**: New fridges on the market causing 3.8 to 4 Mt CO2eq savings per year with in the NSP (calculated over life time of equipment); Recycling of old fridges will reduce 380 kt CO2eq per year with beginning of 2019 * **Volume of public finance**: 13 Mio € * **Volume of private finance:** 100 Mio € * **People directly benefitting**: 300.000 low income households receive green fridges with energy cost savings (50% savings) in 5 years * **Transformational change**: after the mechanisms established under NSP, extension to appliance sector under RED VERDE platform   **Baseline**: All refrigerators currently sold have high energy consumptions (average 850 KWh/year) and contain high GWP refrigerants; refrigerators are not properly recycled and refrigerants escape into the atmosphere; |
| **Outcome:** Manufacturers received attractive credit lines to convert all production lines in the country, a Green Replacement fund is established which enables attractive consumer credits with incentives (on bill financing) and an established EPR scheme covers the costs for the recycling of old fridges | FC:  **Indicators:** 11 Mio EUR in loans are disbursed to manufacturers for production line conversions; 90 Mio EUR in credit loans will be disbursed through the on bill financing scheme to low-income households; waste-manger invest 0.5 Mio € in technological upgrades for recycling technology; manufacturers will agree on fees under the EPR scheme for recycling old fridges  **Baseline**: no funding and financing from manufacturers in production lines, no consumer credits available for low-income households, no investments from waste manager |
| **Output 1:** Policy framework for the transformation of the domestic refrigeration sector is established | FC:  **Indicators**: Policy standards are established by Q2/17 and serve as a basis for loan agreements Q4/17  **Baseline**: no funding and financing to manufacturers based on MEPS and low GWP standards |
| **Output 2:** Producer are designing and producing climate friendly energy efficient refrigerators | FC:  **Indicators**: 11 Mio EUR loans are disbursed to manufacturers for production line conversions by Q4/17; the investments are co-funded with manufacturers’ cash or in-kind contributions of 2 Mio EUR; the NAMA facility provides 2.8 Mio EUR as a concessional loan contribution for the financing.  **Baseline**: no investments, no financing for product redesign and production line conversions |
| **Output 3:** New for old replacement programme is established. | FC:  **Indicators**: Starting from 2018 to 2021, 300,000 green refrigerators are made available with on bill financing schemes to low income households (2018 and 2019: 50,000 each year, 2020 and 2021 100,000 each year); by Q4/17 the on bill financing scheme terms have been agreed with at least 1 major utility; at least 1 credit loan banks has entered into the agreement; From 2018 annually at least 22.5 Mio EUR in credit loans will be disbursed through the on bill financing scheme; From 2020 annually at least 45 Mio EUR in credit loans will be disbursed through the on bill financing scheme, based in the above mentioned figures; That is during the NSP period 90 Mio EUR in credit loans will be disbursed through the on bill financing scheme.  The NAMA facility provides 3 Mio € to the National Green Replacement fund, as a risk recovery fund sharing, so that loans can be offered to a broader spectrum of low-income households.  In 2018 and 2019, 50,000 households subscribe to the on bill financing scheme per year; In 2020 and 2021 there are 100,000 households per year.  **Baseline**: Climate friendly and energy efficient refrigerators are not available through on-bill financing replacement programme and are generally not accessible to low income classes; the related financing with utilities and banks had not been established; |
| **Output 4:** Old fridges are returned and processed in a recycling scheme | FC:  **Indicators**: A feasibility study for a recycling system has been established with the required investment amounts into recycling facilities and the financing requirements through manufacturers (Q4/2017); the funding and financing scheme is agreed with the manufacturers association and other key stakeholders (Q2/2018); the financing scheme has been implemented (Q4/2018) and investments into recycling systems undertaken; in Q1/2019, 100% of fridges returned are recycled  The NAMA facility provides 0.5 Mio EUR for feasibility studies and technological upgrades of recycling facilities, environmental managers will mobilize the same amount for technological upgrades.    **Baseline**: Very few fridges are returned under the current EPR scheme (< 100 fridges within the first half year of RED VERDE operation), because attractive incentives are missing and most fridges being processed by the informal sector without proper recycling and recovery of fluorinated hydrocarbons: Funding for proper recycling from manufacturers and importers under the current EPR scheme is insufficient (112,000 € p.a.), a functioning take-back recycling system has just started but is limited to Bogota; a replacement programme has not been established |
| **Output 5:** Cross sectoral capacity building | FC:  **Indicators**: At least 5 managers and financing officers of each participating manufacturer, banks, utility, take-back-recycling enterprises trained biennially; at least financial tools are available by Q4/2018 for each bank, utility, end users association, resellers on the energy efficiency amortization of climate friendly refrigerators.  **Baseline**: Insufficient know how by financing related managers and officers (manufacturers, banks, government, utilities, take-back & recycling enterprises) on technology for climate friendly and energy efficient appliances, energy saving potential; No training available; no tools available for estimating energy efficiency improvements and financial implications |

***The technological component***

| **Summary** | **Indicators** |
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| **Overarching project goal**  Complete transformation of the domestic refrigerator sectors to climate friendly, energy efficient appliances, the distribution of these green fridges within the country and old fridges to be recycled. | **Indicators**:   * **Placed on the market:** number of climate friendly, energy efficient refrigerators placed on the market (1.1 to 1.2 Mio per year within the NSP period) * **Emission reductions**: New fridges on the market causing 3.8 to 4 Mt CO2eq savings per year with in the NSP (calculated over life time of equipment); Recycling of old fridges will reduce 380 kt CO2eq per year with beginning of 2019 * **Volume of public finance**: 13 Mio € * **Volume of private finance:** 100 Mio € * **People directly benefitting**: 300.000 low income households receive green fridges with energy cost savings (50% savings) in 5 years * **Transformational change**: after the mechanisms established under NSP, extension to appliance sector under RED VERDE platform   **Baseline**: All refrigerators currently sold have high energy consumptions (average 850 KWh/year) and contain high GWP refrigerants; refrigerators are not properly recycled and refrigerants escape into the atmosphere; |
| **Outcome**  All three Colombian manufacturers have converted their production lines to produce climate friendly and efficient fridges. With the enabling policy framework, only green fridges will be sold on the Colombian market, the established replacement will promote the distribution of green fridges in the country while old returned fridges are subject to recycling. | **Indicator**: Number of production lines converted (all manufacturers to convert within the first year of NSP); Number of domestic refrigerators produced, imported and sold in Colombia as well as recycled units; 4.7[[1]](#footnote-1) Mio green fridges (high efficiency and HFC-free) are sold within NSP period resulting in 15.7 Mt CO2eq emission savings; 300,000 old CFC subject to proper recycling resulting in 1.1 Mt CO2eq emission savings  **Baseline:** Inefficient HFC fridges are sold in the country, old CFC containing fridges scrapped at end of life without proper waste management |
| **Output 1:** Policy framework for the transformation of the domestic refrigeration sector is established | **Indicator:** Resolution and decree drafted (Q2/17); standards for green fridges established in Q2/17 as a basis for preferential loans to the manufacturers and consumer credits.  **Baseline:** No MEPS are established, allowing inefficient HFC fridges to be used in the country; Manufacturers and importers continue to place inefficient fridges (average energy consumption: 850 kWh/year); No ban for HFC-134a established, thus fridges with high GWP refrigerants are sold in the country; old CFC containing fridges are scrapped at end of life without proper waste management;  no funding and financing to manufacturers based on MEPS and low GWP standards |
| **Output 2**: Producer are designing and producing climate friendly energy efficient refrigerators | **Indicator:** Number of production lines converted (during 2017); number produced climate friendly units; 4.7 Mio green fridges (high efficiency and HFC-free) are sold in the country with the NSP period between 2018 and 2021) resulting in 15.7 Mt CO2eq emission savings over the life time of the equipment.  **Baseline:** Only one production line has been converted to R600a, with poor efficiency; 2 remaining manufacturers to produce HFC-134a inefficient units not having the financial and technical resource to convert their production lines |
| **Output 3:** New for old replacement programme is established | **Indicator:** Number of new fridges handed out against return of old fridge: Starting from 2018 to 2021, 300,000 green refrigerators are handed out to low-income households (2018 and 2019: 50,000 each year, 2020 and 2021 100,000 each year); proper recycling of 300,000 old fridges within the NSP to result in 1.1 Mt CO2eq emission savings  Baseline: Low-income households cannot afford green climate friendly fridges, old fridges are scrapped after end-of-life without recycling: CFC emitting in atmosphere from scrapped equipment will cause 1.1 Mt CO2eq emission. |
| **Output 4:** Old fridges are returned and processed in a recycling scheme | **Indicator:** Number of recycled old fridges; 300,000 green refrigerators are recycled within the NSP (from 2019: 100,000 each year); number of contracted environmental managers (for dismantling old fridges; at least 5 waste manager will be contracted by Red Verde, Q4/18); Processing 300,000 refrigerators within the project period, resulting in 1.1 Mt CO2eq emission savings.  **Baseline:** < 100 fridges have been processed within the first half year of RED VERDE operation; there is only one waste manager processing old fridges |
| **Output 5:** Cross sectoral capacity building | **Indicator:** Number of publications, guidelines, workshops, technician trainings, awareness raising campaigns; operational RED VERDE monitoring system used for MRV; more than 2,000 technicians are trained on green refrigeration standards, and more than 1,000 technicians receive certificates according to standard NCL 28051022\_3: “Apply Best Practice in the use of refrigerants and lubricants in RAC installations according to environmental rules and standard; number of workshops with regional and local environmental authori-ties to spread information within the country.  Baseline: There is only one R-600 manufacturer and 7,600 technicians with NCL certificate, by far insufficient for a sector transformation |

1. [↑](#footnote-ref-1)