

CARBON REDUCTION CHALLENGE

COOLING QUINFICA



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PROJECT OVERVIEW



COOL ROOFS

Install cool roofs in all of Quinfica's warehouses, reducing their HVAC energy consumption while still meeting the pharmaceutical industry's storage standards.

Cool roofs: reduce emissions by 20% and create \$26,209.90 in cost savings



REINVENTED ROUTES

Reinvent Quinfica's sales team approach, creating a more virtual sales approach through videoconference platforms, and optimizing delivery routes.

Renewal of Quinfica's routes: reduce emissions and create \$99,871.2 in cost savings



BACKGROUND & MOTIVATION

QUINFICA & SUSTAINABILITY

Current initiatives include:

- Recycling Programs
- Reduced Packaging
- Sustainable Providers

COOLING QUINFICA

The Cooling Quinfica Project hopes to provide Quinfica with directions on how to improve their relationship with their environment by reducing their carbon footprint. The two-fold project suggest that Quinfica:



Installs cool roofs in all
their warehouses



Reinvents their sales routes
with virtual platforms.

COOL ROOFS

CARBON SAVINGS

Cool Roof Savings

20% of emissions

TOTAL SAVINGS

10.90 Metric Tons of CO2

COST SAVINGS

NPV:

$\$1,565.51 = -\$19,685.04$ (4%, 10 yrs, \$2,620.99)

PBP:

$7.51 \text{ yrs} = \$19,685.04 / \$2,620.99$

ROI:

$13.31\% = 100 (\$2,620.99 / \$19,685.04)$

Cost of installing cool roofs:

$\$1.50/\text{ft}^2 \times 800 \text{ ft}^2/\text{warehouse} \times 5 \text{ warehouses} = \$19,685.04$

Yearly cost of running HVAC units:

$\$0.17/\text{kWh} \times 15,417.60 \text{ kWh/year/unit} \times 5 \text{ units} = \$13,104.96$


Yearly Savings from Cool Roof:

$20\% \times \$13,104.96 = \$2,620.99$

CO-BENEFITS

In addition to the environmental and economic benefits, installing cool-roofs will also:

- Reduce heat-stress on the structures and therefore extend their useful life
- Decrease possibilities of power-outages
- Reduce local air temperature and thus prevent urban heat islands



REINVENTED ROUTES

CARBON SAVINGS

Hybrid Model Savings

137,280 lbs

COST SAVINGS

Fuel savings for inner city routes:

\$2.91/gallon x 4,368 gallons saved = \$12,710.88/year

Fuel savings for departmental routes:

\$2.91/gallon x 2,496 gallons saved = \$7,263.36/ year

NPV:

\$88,919.70 = -\$0 (4%, 5yrs, \$19,974.24)

CO-BENEFITS

In addition to the environmental and economic benefits, reinventing sales routes will also:

- Increase efficiency by optimizing time that would have otherwise spent driving or in traffic
- Facilitate scheduling
- Reduce stress from traffic, increasing job satisfaction

LOOKING AHEAD



COOL ROOFS

NEXT STEPS:

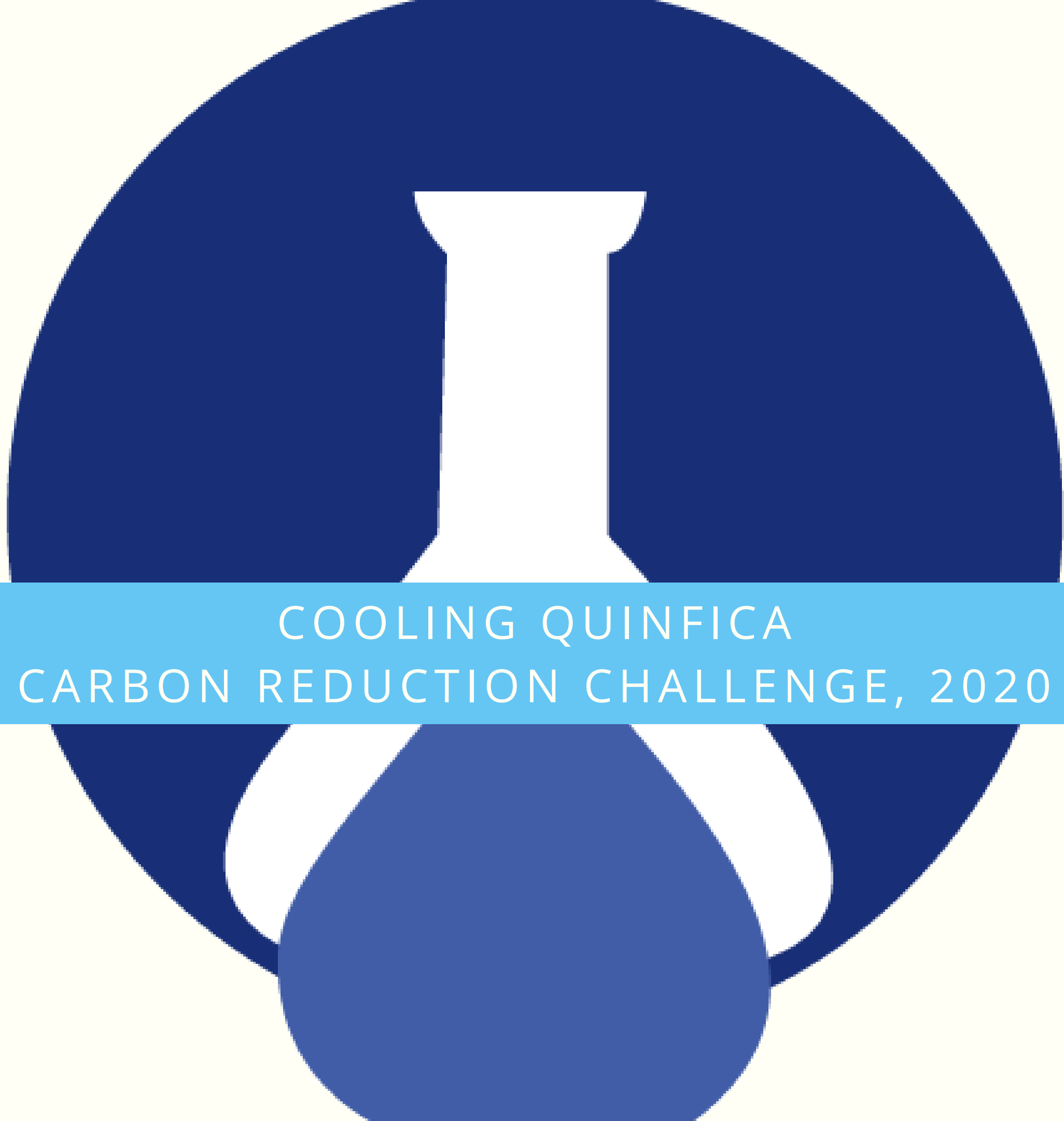
- DEFINE WHICH TYPE OF COOL ROOFING IS MOST COMPATIBLE WITH THE EXISTING STRUCTURE OF QUINIFCA'S WAREHOUSES
- FIND INFORMATION ON WHO INSTALLS COOL ROOFS IN GUATEMALA
- LOOK INTO SOLAR PANELS AS COOL ROOFS



REINVENTED ROUTES

NEXT STEPS:

- TRACK THE GOVERNMENT'S NEWS ABOUT RE-OPENING THE COUNTRY
- CLEARLY DEFINE WHICH VENDORS WILL PARTICIPATE IN THE HYBRID MODEL
- PREPARE FOR A TRIAL PERIOD



COOLING QUINFICA
CARBON REDUCTION CHALLENGE, 2020