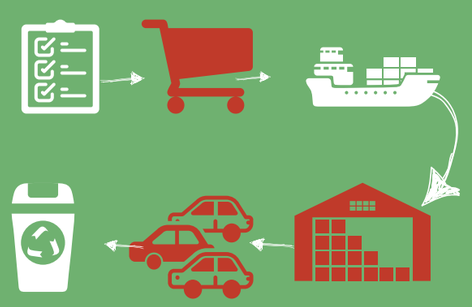


# From Challenges to Change

## Decarbonising Danish Refugee Council's Afghanistan Country Operation

**US$ 15,160/year in savings**

**86 tCO2/year reduction**

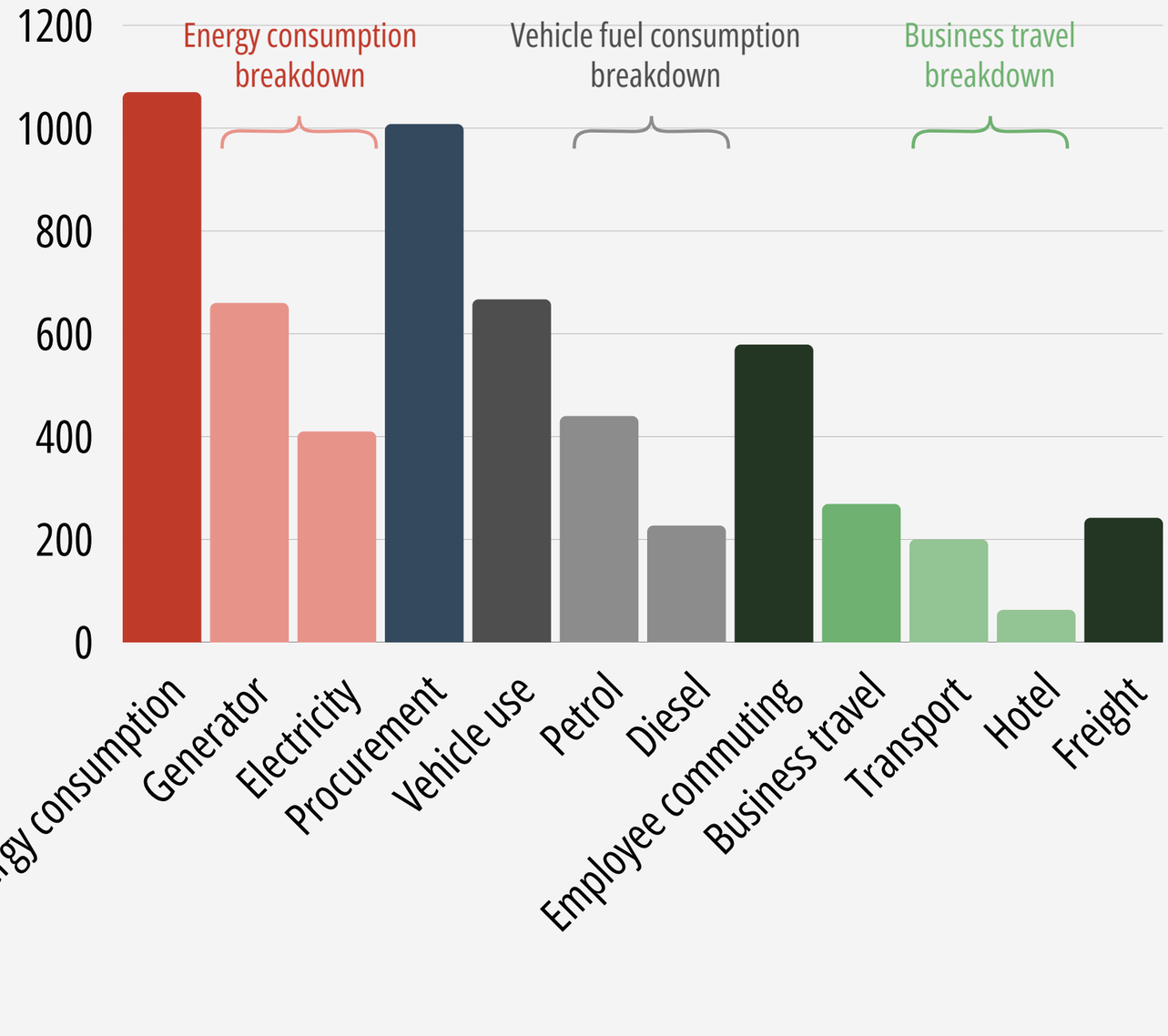

**Reduced air pollution & continuous power supply**

## Why this case study?

The Danish Refugee Council's (DRC) country operation in Afghanistan is on a promising decarbonisation journey. **Their solarisation efforts, financed in part through waste reuse, coupled with sustainable transport improvements demonstrate how any humanitarian operation can make their field operations more sustainable while also saving costs.** Next to already implemented successes, this case study outlines additional suggested measures based on GHG emission hotspots emerging from the operation's carbon footprint.


## Overview

DRC Afghanistan's carbon footprint analysis shows that 66% of emissions come from something called "scope 3", which are emissions not under an organisation's direct control, often from their supply chain (e.g., from the production of goods/services). Grouping emissions into actionable categories rather than traditional scopes highlights the following top three GHG emission hotspots:

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# Energy consumption within premises

**In 2023, DRC's Afghanistan operation spent US$ 72,878 on energy for its facilities. This is the 6th highest spend among the 43 Danish Refugee Council country operations globally.**

**DRC Afghanistan is already addressing emissions and costs from energy consumption within their facilities through solarisation: The country office installed a 60 kWh solar system which covers basic operational needs**, in addition to field offices' solarisation. In 2023, this led to 86 tCO2 reduction which equals planting which equals planting ~930 trees. DRC Afghanistan chose a **modular solar system** allowing for expansion over time.

**The upfront investment of US$ 40,500 was covered in equal parts from HQ funds, DRC Afghanistan's internal funds, and income from waste reuse**: DRC Afghanistan implemented a comprehensive waste management and reuse initiative where all damaged, obsolete, or unusable assets and inventory are disposed of through a public auction process. This generated ca. US$ 15,800 in revenue. This demonstrates how **combining different funding streams and starting small with a modular approach can cover initial costs.**

*Photo credit: Danish Refugee Council Afghanistan*

*Photo credit: Danish Refugee Council Afghanistan*

## Energy efficiency measures

In addition to solarisation, DRC Afghanistan could benefit from taking energy efficiency measures, thereby reducing energy consumption in the first place.

| Measure | What it means |
|---|---|
| **Using behavioural measures & nudging** | Making it easy for people to do the right thing, 'nudging' them on, rather than sanctioning them or providing financial incentives. E.g., **reminders to switch off/unplug lighting and equipment when not needed; putting in place an energy savings competition.** |
| **Optimising heating/cooling** | Only switching on AC during regular business hours and setting to optimum temperature. |
| **Using passive measures** | E.g., putting in place **motion sensors** so that equipment only runs when needed; installing insulating **window blinds** which reduce heat build-up; **painting roofs white** which is heat reflective and therefore also reduces heat-build up; **insulating walls and roof**, with locally adapted insulation material. |
| **Putting in place efficient equipment & lighting** | E.g., **prioritising inverter air conditioning** which are 30-50% more energy efficient than non-invert ones and efficient heating systems such as heat pumps; as well as prioritising **IT and other equipment with energy efficiency certifications**; switching lightbulbs to highly efficient **LED light bulbs** which can reduce lighting energy use by 50-70%. |


*Photo credit: Danish Refugee Council Afghanistan*

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# Construction materials

While traditionally an important category for humanitarian organisations, DRC Afghanistan doesn't purchase relief items. Their goods and services procurement includes products and activities such as office supplies, staff training, and construction materials which means the category can't be addressed with any single measure.

This section looks specifically at c**onstruction materials, since it accounts for six of the ten highest spend items and has a high carbon footprint.** Cement production, for example, is so carbon intensive that if it were a country, it would **rank in the top five in terms of CO2 emissions.**

**The following measures can be taken to address CO2 emissions from construction materials:**

| Measure | What it means |
|---|---|
| **Avoiding overuse** | Ordering **what is required only** and working with suppliers to be able to send back any extra material for reuse; using **sustainable building design guidelines that minimise required construction material** (See for example UNEP's Global Alliance for Buildings and Construction Sustainable Building Materials Hub). |
| **Switching to lower emission materials** | Using **lower-carbon materials** such as timber and biomass, e.g., straw/clay/mud. |
| **Going local** | Considering **local traditional architecture and locally available materials** which are often better adapted to local climates, can have a lower carbon footprint, and promote local value chains. |
| **Improve key construction materials** | Considering **lower-carbon cement**, for example by reducing the clinker-to-cement ratio with alternative materials or replacing it with limestone; for bricks, consider **energy-efficient brick kilns** (consider local kiln solutions as well). |

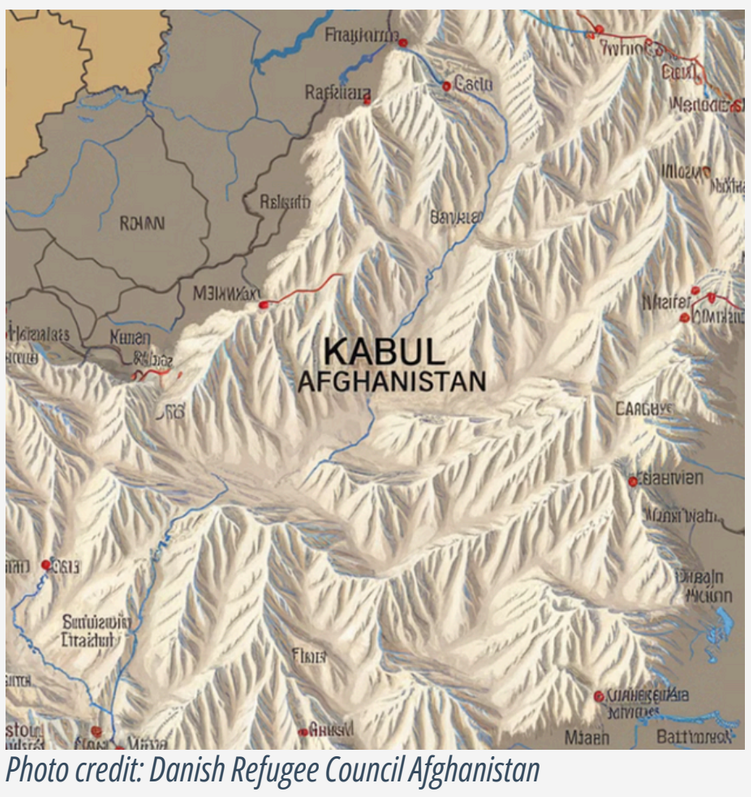


*Photo credit: Danish Refugee Council Afghanistan*

# Vehicle use

**Compared with all other Danish Refugee Council country operations, Diesel consumption is highest in DRC Afghanistan.** In litres, diesel and petrol combined amount to ca. 448,143 litres. This is over 3 times higher than fuel consumption in the next highest-ranked country operation, Ukraine.

The Afghanistan operation is **exploring transport demand management and efficiency options to reduce vehicle movement by 30% by the end of 2025:**

- Decommissioning older, high-emission vehicles.
- Considering weekly movement schedules to consolidate and thereby reducing vehicle movements.
- Vehicle sharing with other NGOs during joint missions (bearing in mind security considerations).

| Measure | What it means |
|---|---|
| **Adopting vehicle tracking software** | This helps monitoring vehicle location, performance, and activities in real-time. Thanks to better i**dentifying fuel consumption hotspots, this can lead to significant fuel savings.** |
| **Right-profiling vehicles** | **Assigning vehicles optimally based on their intended use,** e.g., 4x4 vehicles for offroad/difficult terrain only and light vehicles for in-town travel. |
| **Training drivers in eco-driving** | Eco-driving or **fuel-efficient driving** includes e.g., turning off the motor when idling for more than 10 seconds; gently accelerating/braking; regularly checking tyre pressure. |
| **Fuel-efficient vehicles** | While, for infrastructure reasons, electric and hybrid vehicles are not an option in Afghanistan, using **more fuel efficient vehicles can reduce emissions and costs.** |





# Employee commuting

According to a recent survey in **DRC's Afghanistan office, about half of employees commute to work using their personal vehicles, followed by walking and cycling (using electric bikes). Most employees don't work from home.**
This means, **teleworking and virtual meetings** are an opportunity for emissions saving for DRC's Afghanistan office. Since some employees already walk/cycle to work, systematically promoting cycling e.g., via bicycle parking, free bicycle maintenance services, or subsidizing (electric) bicycles could be another option.

# Business travel

For business travel with office vehicles, DRC Afghanistan could prioritise **fuel-efficient vehicle**s. For any travel outside of Afghanistan, the office can incentivize **sustainably certified accommodation**. Virtual meeting participation is a third option. For international travel, unfortunately options such as prioritising direct flights are more difficult to realise due to Afghanistan's geographic location and connections (often, only few flights operate to and from the country).

# Outcomes & impact of measures already taken

Thanks to its solarisation efforts, DRC Afghanistan has achieved considerable cost and emissions savings, detailed in Table 5 below. Additional measures outlined above could further strengthen this positive impact.

### US$ 15,160/year in savings

On average, solarisation efforts led to 60% cost reduction. **Payback is 31 months.** HQ and Afghanistan country operation funds along with funds from waste reuse covered upfront costs. DRC Afghanistan's field offices' solar systems generate cost savings between 30% and 85% compared to pre-solarisation.


### 86 tCO2 reduction

**Thanks to its solarisation, DRC's Afghanistan country operation avoids ca. 86 metric tons $CO_2$ annually.** The country office's emission reduction alone equals planting ~930 trees.

### Reduced air pollution & continuous power supply

Existing generators' lifespan increased due to reduced use, while lubricant and needed repairs decreased. Overall, generator use has decreased which contributes to lower air pollution levels.

# Recommendations & lessons learnt

- ✓ **Start with your carbon footprint:** It shows where your hotspots are, sets a baseline and therefore helps demonstrate progress.
- ✓ **Look for win-win measures:** Based on your carbon footprint and spend analysis, prioritise measures that generate cost AND emissions saving, e.g., if generator fuel costs are high, prioritise energy efficiency measures and solarisation.
- ✓ **Take a deeper look at procurement:** Which are high-spent items? Which items have a high carbon footprint? Make addressing those a priority.
- ✓ **Explore low-hanging fruit:** Do measures without upfront cost or time investment exist, e.g., telecommuting?
- ✓ **Look at local infrastructure and available technologies:** Some options, e.g., electric vehicles might not be possible, but others, e.g., prioritising local construction materials can be a win-win in terms of cost, emissions, and social benefits.
- ✓ **Combine different means to cover upfront costs:** If internal funds cover only a part, ask whether HQ has funds dedicated to sustainability. Consider your waste as a source of revenue.
- ✓ **Choose modular systems and approaches:** Start small but have expansion in mind. E.g., solarise only a part of your facility, but make it easy to expand this when more funds become available.

# Where to get more information

- Contact the **WREC Coalition HelpDesk**
- Contact Qasim Shabbier, Head of Support Services (HoSS) at DRC's Afghanistan offices: **qasim.shabbier@drc.ngo**
- Consult tools and case studies available on the **WREC Coalition decarbonisation website**, for example WREC's **Cheat Sheet on Greenhouse Gases**, WREC's **Supply Chain Decarbonisation Quick Guide**, the **ReAct tool** on calculating solarisation needs, **SCI's Solar Journey in Sierra Leone**, or IMC's **Solarisation of Facilities: Operational Guidance.**

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